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ORIGINAL LECTURES.

CHRONIC LEAD-POISONING.

A Clinical Lecture delivered at the Philadelphia Hospital, September 19, 1883.

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GENTLEMEN: The patient whom I show you to-day presents, on superficial examination, nothing unusual in his appearance except anæmia, which is, however, less marked than it has been. This symptom is a part of the condition of which he is suffering, but the following history prepared by the resident physician, Dr. Culpepper, describes some more striking symptoms due to the same cause:

M. B., laborer, admitted August 3, 1883. He is 35 years old, born in Ireland; father died of phthisis; other family history good. He denies having had venereal disease, but is somewhat intemperate. He began to work in a white-lead works in April a year ago, and after two months was seized with abdominal cramps, and had to give up work. He recovered in two weeks, and then worked in a coal yard until May of the present year, when he again returned to the lead-works. One month later he was again seized with cramps, but persisted at his work until about a month before his admission to the house, when he was again compelled to give up. During this month he suffered from cramps in his fingers, toes, and abdomen, noticed that his legs and feet were swollen, and heard from his friends that he had had five epileptoid fits, although he has had none since his admission. He also noted an inability to straighten his wrists and fingers.

When admitted, he was suffering from abdominal colic, particularly on the left side, together with great and obstinate constipation. He had also a blue line on his gums. He was first treated with sulphuric acid, and afterwards with iodide of potassium in small doses. He has improved considerably, but still suffers from intermittent colicky pains, although his bowels appear to be tolerably regular.

It is scarcely necessary to say that our patient is a victim to lead-poisoning, but let us discuss the symptoms on which we base our diagnosis, and, if necessary, complete the picture of the disease by pointing out others which belong to it, but are not here present.

First, the *anæmia*, which, as stated, is less marked than it has been. This symptom is a very constant one in lead-poisoning, and its higher degrees are attended by a sallowness which early gave rise to the term *icterus saturninus*; but it must be remembered that this is not caused by bile pigment. In more serious cases, too, the impaired nutrition results in an emaciation which is sometimes extreme. Along with the anæmia are frequently noted a sweetish taste, with fetid breath, and loss of appetite.

The next symptom, which has been most striking in this case, and from which alone, in connection with the history of exposure, one may often diagnosticate lead-poisoning, is *colic*. Indeed this symptom, with the next to be considered, constipation, is often the sole manifestation of the disease, so that the term lead-

colic has come to be recognized in medical terminology. It will be noted that in this case the colic was worse in the left side. It is more frequent in the region of the umbilicus, and is often relieved by pressure. It varies greatly in degree, being sometimes a simple, grumbling pain, at others of frightful severity, the patient writhing in the paroxysm, which, as a rule, does not last long, but is soon followed by another; but it may continue for hours or until relief is afforded by treatment. It is probably due to powerful contractions of the muscular wall of the intestine, by which the nerve-filaments distributed through it are compressed. Unlike flatulent colic the abdomen is not distended, but flat, and may even be retracted, sometimes so much so that it is said that the vertebræ may even be discerned through the abdominal walls. Still, distention of the abdomen is occasionally present. The pulse during the attacks of colic is often strikingly slowed, having been noted as slow as thirty per minute.

Constipation has been alluded to. It is very common, even more constantly present than the colic. And yet it is not invariable, and may even be substituted by diarrhœa.

It will be remembered that our patient suffered also with *cramps* in his fingers and toes, as well as with colic. This is a well-recognized symptom of lead-poisoning. Nor are these cramps confined to the fingers and toes. Groups of muscles anywhere, and especially flexor muscles, as of the arms and legs (the latter most frequently), become involved. In addition to these painful cramps, which, like the colic, are intermittent, there are pains in the neighborhood of the joints. The sum of these painful joints and muscles has received the name *arthralgia saturnina*. They are quite frequent, occurring, according to the statistics of Tanquerel, in 755 out of 2151 cases.

Our patient's history also contains a note of swelling of the legs. *Edema* is a condition sometimes met with in lead-poisoning, but usually in the more advanced stages of the cachexia. It is impossible in this instance to decide whether the swelling was that of edema or not.

I have called your attention to the *blue line* on the patient's gums. It is a very characteristic symptom, and appears at the border of contact of the gums with the teeth, or just above it. As a rule, it is easily recognized when present. It is caused by the presence of sulphuret of lead, produced by the action of sulphuretted hydrogen upon the lead in the tissue of the gums. Hence the line is more common and more distinct on the gums of those who take no care of the mouth, and in whom sulphuretted hydrogen is generated in the decomposition of food. Such has been the case with our patient. This line often remains after all other symptoms have subsided, and although it is not invariably present, its disappearance may be considered a pretty sure sign that the harmfulness of the lead has been suspended.

Another symptom of great importance is *muscular paralysis*. This, in contrast with the muscular cramp, is more likely to involve extensor muscles than flexors, and especially those of the wrist, giving rise to the very characteristic symptom known as "drop-wrist," which, in Tanquerel's experience, occurred in 107 out of 2151 cases. Our patient appears to be free from it now, but there was evidently loss of power at one time in the extensors of the wrists and fingers, shown by the inability to straighten them. This is what would be

expected in a case of comparatively short exposure, like the present; for, usually, it is not until the colic and arthralgia present themselves that the wrist-drop appears. On the other hand, it has been the first symptom observed. It may last but a few days, or it may resist all treatment. It may affect a single muscle, or groups of muscles. It is further characterized by the fact that the muscles affected are subject to rapid atrophy, so that they almost seem to disappear; dislocations of the more movable joints, as the shoulders and phalanges, may occur in consequence. While sensibility is but slightly impaired, electro-muscular contractility rapidly disappears. The muscles cease to respond to the faradic current, while the reaction to galvanism is unchanged, or slightly increased at first. Tremor of the paralyzed muscles is often observed.

Another set of symptoms of lead-poisoning, not uncommon, suggested by, if not actually present in, the case before us, are those due to involvement of the central nervous system. You will remember that he had convulsive seizures, which were considered by his friends as epileptic. Nevertheless, I can scarcely conceive that such involvement has taken place; for the symptoms developed by neurotic changes are not so prompt to disappear. Occurring usually only in those who are peculiarly exposed, they come on in from eight days to fifty years, the majority showing themselves, according to Tanquerel, within the first nine months. The most frequent mode of manifestation is in eclampsia, as in the case of our own patient. But there may be headache or amaurosis, apathy, stupor, or the opposite condition of maniacal excitement, or melancholia and hallucinations.

A frequent complication of lead-poisoning, more especially where it has been present for some time, is *interstitial nephritis*, and its resulting morbid product—the contracted kidney, as shown by the presence of a small degree of albuminuria and tube-casts; and as this is the form of kidney disease in which uræmic convulsions are most frequent, it is evident that these must be distinguished from the convulsions just referred to as a part of the saturnine encephalopathy. Hence, an examination of the urine in every case of lead-poisoning should be early made in the study of the case. In this case the urine was examined with negative results.

In consideration of the evident *etiology* of lead-poisoning, we need only pause to enumerate a few of the many ways in which the intoxication may be brought about. That house-painters and workers in white-lead factories are frequent victims to lead-poisoning, goes without saying. That we, in the cities, who receive our immediate water supply through leaden pipes, do not more frequently acquire the disease, is, at first thought, more surprising. But this, too, is easily explained. It is the very impurities of our drinking waters which save us. Almost all drinking-waters contain sulphate of lime, the sulphuric acid of which combines with the superficial layer of lead and forms an insoluble coating of sulphate of lead. Should it happen, however, that water of unusual purity, as rain water, is stored in lead-lined tanks, or even painted tanks, it not rarely happens that families are poisoned thereby. Among the recognized causes is the use of cosmetics and hair-dyes containing lead, and even the use of vegetables canned in tin vessels. A very interesting case of lead-poisoning from this source was published in a recent issue of THE MEDICAL NEWS (Sept. 8th), by Dr. Wm. Magruder. All grades of what is known as tin, which is really iron coated with a layer of tin, contain a small quantity of lead; and the more inferior the tin the larger the quantity of lead. Now certain conditions favor the solution of this lead. Thus, if any of the vegetable acids, as acetic, tartaric, or citric, be present, they may dissolve the lead and thus form soluble salts, which are

readily absorbed. Of course, such solution is favored by prolonged action of the acids; hence old canned vegetables are more dangerous than those recently canned, and it would be a wise measure to insist that canned fruits and vegetables should be stamped with the date of the canning. The solder used in closing the cans may also be a cause of poisoning from this source; when it is considered, however, how enormous is the consumption of canned fruits and vegetables, and how few the cases of lead-poisoning traceable to it, it is evident that even moderate precautions may suffice to remove the danger altogether.

Among the more rare causes of lead-poisoning mentioned by Naunyn in his article on lead-poisoning, in Ziemssen's *Cyclopaedia*, have been the result of cooking in badly glazed crockeryware, drinking beer drawn through lead pipes, or beer and wine from bottles which have been washed with shot, of which some have been left behind, the use of snuff packed in spurious tinfoil containing lead, and from sleeping on mattresses, the hair in which was dyed black by some lead-containing substance; and one, a most incredible case, is that of a proof-reader who was poisoned after many years' reading of printed proof. Notwithstanding the solubility of the acetate of lead so much used in medicine, it is very rare that poisoning has resulted from its administration, and there need be no fear of using it for the purposes to which it is adapted until at least a couple of drachms have been given.

It has always been an interesting question, how lead in the system operated to produce its peculiar effects. That the lead itself lodges in the tissues, is easy of demonstration, and analysts have gone so far as to determine the exact quantity in the different tissues of animals poisoned by lead; which, by the way, is surprisingly small, the largest amount found being a quarter of one per cent. in the bones, while that in the muscles was but .002 to .003 of one per cent. It was formerly the custom to ascribe the phenomena of lead-poisoning partly to the direct action of lead in the tissues; the cramps and the palsy to the presence of lead in the muscular fasciculi; the colic to the lead in the unstriated muscular fibre-cells, and the nervous symptoms to the lead in the nerve-centres. In part, too, these phenomena were ascribed to the anæmia of the tissues due to the contraction of the arterioles induced by the presence of lead in the muscular coat. More recently, however, the soundness of these views has been shaken by some experiments of Heubel, and the tendency appears to be to ascribe the phenomena of lead-poisoning to neuroses which are undoubtedly central in the case of the encephalopathic phenomena, and which are probably central in that of the peripheral symptoms. On this supposition, the phenomena of lead-poisoning have been compared to those of chronic alcoholism, which are ascribed to effects upon the nerve-centres due to the long-continued circulation through them of blood charged with alcohol.

The *morbid anatomy* of lead-poisoning may be quickly disposed of, for, so far as studied, it has none which is essential to it. That is, although we find the paralyzed muscles in a state of fatty metamorphosis, yet this alteration is secondary. If it be true, as is now claimed, that the phenomena of the disease are due to alterations in the central nervous system, the microscope should discover changes which we would expect to be primarily of an interstitial character, but nothing bearing upon this has been reported, so far as I know, until quite recently,¹ when Moies published the results of some experiments upon guinea-pigs, which he dosed

¹ Virchow's Archiv, xc. p. 455, Dec. 1882, and Centralblatt f. d. med. Wiss., 1883, p. 358. See also abstract in Med. Times and Gaz., Sept. 6, 1883, p. 269.

with acetate of lead until they died with symptoms of plumbism. On post-mortem examination, in addition to granular and fatty changes in the surface and glandular epithelium of the alimentary canal, infiltration of the adventitia and muscular coats with leucocytes which were undergoing degeneration, hemorrhages, and superficial ulcerations, *scleroses of the ganglia with atrophy of their cells and nerve-fibres* were noted; also overgrowth of the connective tissue of the gastrointestinal wall, kidneys, liver and *central nervous system*. Here, again, the question arises as to which of these results is primary. Moies is inclined to regard the protoplasmic changes as the first event, and the connective-tissue hyperplasia the result of this, while he considers that the resulting sclerosis causes further atrophy of the active protoplasmic elements, including the muscular fibres.

As to *prognosis*, it depends largely upon the degree of saturation of the system with lead. As a rule, therefore, persons who respond most quickly to the action of the poison are those who most promptly recover, provided, of course, they are removed from the influence of the lead; for such persons, too, being most susceptible, are in great danger from prolonged exposure. We are enabled to infer something of the prognosis from the symptoms which are present. If the attack be ushered in by a colic, and there be no other symptoms except constipation, we may confidently expect our patient to recover completely. If there be arthralgia and palsy, the prospect is less certain; still less so if there be atrophy; and least of all if there be encephalopathia, when complete recovery is hopeless. So, too, I have never known a case of contracted kidney due to lead-poisoning, to pass away. No favorable prognosis should be given where the patient is unable to remove himself from the cause. It must be remembered, too, that relapses occur, often at long intervals, even when the patient is removed from exposure, and that the primary disease has been known to make its appearance a long time after exposure.

Treatment.—Much may be done to guard against the occurrence of lead-poisoning by proper precautions on the part of those exposed to it. Thus, those employed in lead-works may do much to protect themselves, or rather their employers may do it for them. Thus, such persons should keep themselves scrupulously clean by frequent hot baths and frequent changes of clothing, which should never be allowed to become saturated with lead. Mehu recommends that hypochlorite of sodium be added to the hot baths. It is made by mixing in two and a half gallons of water thirteen ounces of chlorinated lime with sodium carbonate. Sulphur baths were recommended by Todd, it being thought that sulphur has the power of neutralizing lead by forming insoluble compounds with it. From two to four ounces of sulphuret of potassium are mixed in from twenty to thirty gallons of water. Above all, the employés in lead-works should not be allowed to eat their meals in the lead-factory, as the metal is often introduced with the food. Finally, the ventilation of the factory should be of the best. Experience has shown that much may be done to arrest the dangers of lead-works by such precautions. The same remarks with regard to cleanliness, bathing, and change of clothing, apply to painters, and indeed to all who have to do with lead in any shape or degree. It is evident that lead-lined and painted cisterns should never be used in houses; that cosmetics and hair dyes are dangerous, and that care should be taken in the selection of canned vegetables which may have been too long canned.

The curative measures may be divided into those for the immediate relief of urgent symptoms and the removal of the lead from the system. It is scarcely

necessary to say that the patient should be promptly removed from the influence of the lead. The extreme pain of a lead colic requires to be relieved by the hot-bath or poultice, and the opiate, of which the best mode of administration is by the hypodermic syringe, one-quarter or one-third of a grain of sulphate of morphia being required for the purpose. Identical treatment is required for the arthralgia. The accompanying constipation is best relieved by sulphate of magnesium, the sulphuric acid of which, on theoretical grounds, at least, aids in rendering inoperative the lead which has entered the system, by forming an insoluble sulphate.

These more urgent symptoms being relieved, measures directed to the elimination of the lead should be taken. The hot baths already referred to may be used for this purpose, as well as for prophylaxis, and purgatives and diuretics may aid in the elimination. The iodide of potassium is the remedy most relied upon to eliminate the lead from the system. It is believed that after its absorption into the system the lead becomes intimately united with the albumen of the tissues, forming an insoluble compound; that the iodide of potassium, after its absorption, combines with the lead, and forms a soluble iodide of lead, which is dissolved out, reënters the circulation, and is passed out with the urine and feces. It is evident that elimination by these channels will be encouraged by purgatives and diuretics. It is even suggested that acute lead-poisoning may be produced by the liberation of the soluble lead salt into the blood in this way. Hence, caution is suggested in the use of the iodide. Practically, I can scarcely conceive this to occur with such doses as are ordinarily given. Our patient is taking ten grains three times daily, which, after a while, will be reduced to five, but this dose will be kept up indefinitely. Remember that iodide of potassium is more efficient when given fasting and freely diluted.

For the paralyzed muscles, faradaic electricity is indicated, and should be daily administered, both to resist the tendency to atrophy and to overcome it.

That restorative and blood-making remedies, in the shape of nutritious, easily assimilable food and iron, should also be given to antagonize the cachexia which is always a part of plumbism, is evident. In view of the nervous lesions which may be at the bottom of the phenomena, we should expect strychnia to be a valuable adjunct to our treatment, and it is generally so considered. It should be given in full doses, $\frac{1}{16}$ th of a grain three times a day, and increased to a $\frac{1}{8}$ th, which should be kept up. Ergot is said to have been useful in increasing the power of the muscles involved in the palsy.

ORIGINAL ARTICLES.

A CASE OF GASTROSTOMY FOR CARCINOMA OF THE OESOPHAGUS,

WITH A BRIEF ANALYSIS OF THE RESULTS OF 137 CASES OF A SIMILAR NATURE.

BY SAMUEL W. GROSS, M.D.,

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ON the 7th of February, 1882, a shoemaker, 64 years of age, presented himself at the surgical clinic of the Jefferson Medical College Hospital on account of difficulty of deglutition. Five months previously, in swallowing solid food, he first noticed trouble, which rapidly increased, so that at the expiration of four weeks he was able to take only fluid nourishment in the form of milk, soups, and oatmeal gruel. For the past month his sole diet

was milk, to which he occasionally added a little whiskey, but only when he felt very weak, on account of the pain which it excited. The amount of milk that he drank during this period averaged about two pints a day. At times it occasioned suffering and a sense of constriction in the chest, and was now and then ejected.

The man was pale, debilitated, emaciated, and weighed only eighty pounds. Exploration with a bougie detected an obstruction, situated at eleven inches and a half from the level of the incisor teeth, through which instruments could not be passed. From the absence of a history pointing to cicatricial stricture, I diagnosed carcinomatous obstruction of the oesophagus at the point at which it is crossed by the left bronchus. In view of his increasing prostration and the outlook of death from starvation, I explained to him that gastrostomy might prolong his life, but at the same time fully impressed upon him the risks of the procedure. He at once expressed a wish to take the chance offered him, so that he was placed in a ward and his rectum prepared for the reception of nourishment.

With the assistance of my father, Professor S. D. Gross, and Professor Brinton, Dr. Hearn, Dr. Allis, Dr. Packard, and Dr. Nancrede, I did the first step of the operation under chloroform, which was preferred on account of its less liability to provoke vomiting than ether, and with strict antiseptic precautions, on the 9th of February. An incision, two inches and a half long, was made half an inch below and parallel with the eighth and ninth left costal cartilages down to the peritoneum, and bleeding arrested with hot-water and one carbolized pure silk ligature. On incising the peritoneum to the same extent as the outer wound, the stomach at once filled the opening, its omental attachment being fully in view. The centre of the exposed portion having been grasped with tenaculum forceps, two silver wires were then passed, so as to penetrate the muscular coat, at the distance of six lines from each other, their object being to steady the organ during the succeeding steps of the operation and during the puncture to be made in its second stage. Eight silver sutures were next inserted through the entire thickness of the edges of the central portion of the wound and through the muscular wall of the stomach, through which perfect apposition of the peritoneal surfaces was ensured, when the remainder of the incision was closed with ordinary stitches. The usual carbolized gauze dressing was then applied, the operation having required one hour for its completion.

The patient reacted well. On the evening before the operation the pulse was 100, the respiration 24, and the temperature 101°. On the following evening the pulse was 96, the respiration 34, and the temperature 101.2°. The dressings were removed on the second day and reapplied, the condition of the parts being excellent. On my regular visit at 11 A.M., Feb. 13th, I found him to be in a most critical state. The thermograph of the previous evening indicated pulse 115, respiration 30, and temperature 101.2°; and of that morning, pulse 118, respiration 30, and temperature 99.3°. I was informed that at

4 A.M. there was low, muttering delirium, with panting and feeble respiration. Up to the time of my visit, nourishment had been administered with great regularity by the rectum, the articles having been milk, beef juice with pepsin and dilute hydrochloric acid, eggs, and scraped beef and pancreas, which alternated with one another, and to which a little brandy was occasionally added. I now administered brandy and milk by the mouth, and soon afterwards opened the stomach by a small puncture, through which beef juice and brandy were poured through a funnel into the organ. The man, however, continued to sink, and died at 3 P.M., or ninety-nine hours after the operation.

At the post-mortem examination, the attachment of the stomach to the wall of the abdomen was found to be firm. There was no peritonitis. The liver was hobnailed, and the large vessels of the belly and thorax were extensively calcified. The oesophagus was occupied by an ulcerated epithelioma two inches long, the centre of which was crossed by the left bronchus. The post-oesophageal lymphatic glands were carcinomatous, and the ulcer of the neoplasm had extended into the mass of glands, through which the obstruction had assumed a sigmoid configuration. The tube itself was dilated above the seat of the disease.

This is another case of gastrostomy in which the operation was too long delayed. Even if I had seen the patient when the low delirium indicated approaching collapse, I doubt whether the administration of food by the mouth or by the stomach would have been of any avail. In a case of a similar nature, I would not wait so long for the completion of the second step of the operation, but would open the stomach at the end of forty-eight hours, when the adhesions would be sufficiently firm to resist the peristaltic movements of the organ. Indeed, when the case is urgent, rectal alimentation may with propriety be supplemented by feeding by the mouth, provided small quantities of proper food, such as koumiss, be administered, after the expiration of twenty-four hours, since there is sufficient post-mortem evidence of firm adhesion at a far earlier period than one would imagine. Thus, in the case of Berger, the union was solid in nineteen hours; in the cases of Croly and Le Fort in twenty-four hours; and in that of Reeves, in thirty hours. In studying the records of the 64 fatal cases from exhaustion, I am satisfied, when the operation of Howse is practised—an operation in which the stomach is not opened until its fixation is presumed to be firm—that some lives might have been saved by feeding by the mouth or through the stomach sooner than was done. The post-mortem evidence in regard to adhesion in the cases just referred to is, therefore, most valuable for future guidance in this direction. In another class of cases, the operation of Howse is inapplicable; there can be no delay whatever, and the stomach must be opened at one sitting.

As gastrostomy for carcinoma is merely a palliative operation, its designs being to relieve the pangs of hunger and thirst and to prolong life, its statistics

merely indicate the chances of survival. Its mortality is by no means inconsiderable, as would naturally be expected when the exhaustion from deficient alimentation and the changes produced in other organs by secondary growths are taken into consideration. I have collected the details of 137 operations, which will be made the subject of a future and more complete paper, of which 31 perished as the result of the procedure—17 from peritonitis, 9 from pleurisy, bronchitis, and pneumonia, 4 from gangrene of the stomach, and 1 from uræmia—the mortality being, therefore, 22.6 per cent. 64 cases died of exhaustion, at varying periods up to the expiration of one month, but of these, 37 succumbed within forty-eight hours, so that shock doubtless was a factor in these examples. If we regard all of the 37 as having been due to shock, 137 operations afford 68 deaths, or a mortality of 50 per cent. Be this as it may, 95 died within a month, and 42 survived longer than a month.

The success of gastrotomy is progressively improving. Up to January 8, 1879, Petit¹ had collected 46 cases, of which 7, or 1 in every 6.57, lived for upwards of a month. Up to the middle of 1883, Alsberg² had collated 93 cases, with 29 survivals, or 1 in every 3.20, after one month. Both Petit and Alsberg, however, include in their statistics examples of cicatricial structure, which yield better results than when the operation is done for carcinoma. Of the 137 cases which I have analyzed, 42, or 1 in every 3.26, lived for upwards of a month, and as they were all examples of carcinoma, it is evident that the results are growing better and better. Of the 42, 17 died subsequently, 3 in two months, 3 in two months and a half, 3 in three months, 2 in four months, 1 in five months, 1 in six months, 1 in six months and a half, 1 in seven months, and 2 in eight months, and of the remainder, 9 were living, respectively at the end of two months, two months and a half, three months and a half, four, five, six, and seven months, and twelve months and nine days, while another made a rapid recovery and gave birth to a healthy living child.

The case that was still alive upwards of one year is so remarkable that it is worthy of more than passing notice, particularly as I am able to add some facts to the original report.

On the 18th of February, 1882, Mr. Walter Whitehead,³ of Manchester, excised the tongue, close to its base, of a man, forty years of age, on account of carcinoma, and opened the trachea, on the following day, for impending suffocation. On the 8th of March, the pharynx being blocked by the growth, and starvation being threatened, the first step of gastrotomy was performed, and the stomach was opened on the 19th. In answer to a letter inquiring into the sequel of the case, Mr. Whitehead wrote me, under the date of March 28, 1883: "I have to inform you that he is still alive. The glands—submaxillary, cervical, and sublingual—are very much enlarged, but painless. He can

swallow fairly well and has discontinued the use of the gastric fistule. He suffers very little inconvenience from his condition, and, although he cannot live much longer, he is emphatic in his assertion that since the operation he has suffered no pain, whereas beforehand his life was one incessant period of unbearable suffering."

While not strictly a case of carcinoma of the œsophagus, it was substantially the same thing, as it interfered with deglutition, and threatened life from inanition. The man had gained nearly a stone in weight in four months, and was able to articulate with remarkable distinctness. Such a result must be regarded as a surgical triumph, and speaks more in favor of gastrotomy than would any arguments that could be made for it.

1112 WALNUT STREET, November 24, 1883.

AN EASY METHOD OF STAINING BACILLUS TUBERCULOSIS.

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THE examination of secreta and excreta for bacilli is growing to be of such importance that a simple method, which will put such examinations within reach of every medical practitioner familiar with the use of the microscope, is greatly to be desired. My own experience, and that of friends who have talked with me on this subject, leads me to believe that the methods commonly employed do not always give satisfactory results. In many cases where the bacteria were undoubtedly present, the methods of Koch, Ehrlich, and others have failed to reveal them, although the examinations were made strictly in accordance with their directions. Weigert has lately published (*Deutsche medicinische Wochenschrift*, June, 1883, No. 24) a method which gives very good results. My own method, however, which is a modification of his, has given me more satisfactory results than any other which I have tried.

I place the sputum between two slides instead of between cover-glasses, and thus obtain easily the thin layer which is so necessary for examination. This is a matter of very great importance, as all the subsequent operations are greatly simplified by the use of the slide instead of the cover-glass.

In order to evaporate the water, I heat two flat dinner plates over the alcohol lamp or Bunsen burner, taking care that one of them is not hot enough to burn the hand. The slide is then placed upon the cooler plate and covered by the hot one, when the water quickly evaporates.

Meanwhile, I get ready four tumblers with clear water and my solution of nitric acid (one part nitric acid to two parts distilled water), and filter one teaspoonful of a two per cent. gentian violet solution into a small watch-glass. This is stirred up with a glass rod which has been dipped into a bottle containing strong water of ammonia (the glass rod should not carry more than one drop of the liquor ammoniacæ). With a dropping-tube kept specially for that purpose, a few drops of this staining solu-

¹ *Traité de la Gastrotomie*, Paris, 1879.

² *Archiv für Klinische Chirurgie*, Bd. xxviii. Heft 4, 1883.

³ *British Medical Journal*, vol. 1, 1882, p. 133.

tion are then transferred to the dried sputum on the glass slide, which has previously been drawn, not too quickly, three times through the flame of a Bunsen burner or alcohol lamp, in order to fasten the sputum to the slide. The slide, with the staining-fluid on it, is then held at some distance over the flame, until evaporation sets in. Then the staining-fluid is poured off, and the slide dipped into a glass of clean water, after which it is at once put into the nitric acid solution. It is left there until the color has disappeared, which takes a few seconds. It is then washed off again in pure water, and should the color reappear in this, it should be once more submitted to the nitric acid bath and washed out again in clean water. A few drops of a saturated vesuvin solution in water are next dropped on the slide and left there for about thirty seconds, then washed off—always in pure water, when the specimen will show a slightly brownish color.

Four to six drops of absolute alcohol are next poured on the slide, which is then placed slanting, to allow the alcohol to flow off and evaporate. After the slide has thoroughly dried, a few drops of xylol are dropped on it and left to evaporate, when by covering the specimen with a cover-glass, after having put on one drop of Canada balsam dissolved in xylol (dimethyl-benzol), it is ready for examination, and will keep for any length of time. A homogeneous immersion lens is very desirable, but not absolutely necessary if one only wants to see the bacilli; but a condenser is indispensable. The bacilli appear violet, while the rest is stained slightly brownish-yellow. The staining solution is prepared by dissolving two parts of gentian violet in one hundred parts of distilled water; and to prevent the solution from spoiling, it is well to add a small quantity—about ten cubic centimetres—of absolute alcohol to one hundred grammes of the solution, which may then be kept until it is wanted.

THE ANTISEPTIC TREATMENT OF A DISCHARGING EAR BY THE DRY METHOD.

BY CHARLES A. TODD, M.D.,

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THE method of aural practice which is the subject of this paper, was first published in the *Transactions of the Missouri State Medical Association*, May, 1880; since which time it has grown in favor, and has taken its place among the established therapeutical procedures. The general practitioner will discover in its extreme simplicity a grand merit, while the specialist cannot fail to be gratified at this invaluable addition to his resources against the serious class of aural disorders in which it is efficacious.

This method of treatment of a discharging ear (suppurative or catarrhal, otitis media or externa, acute or chronic) may be thus summed up: The ear, as a rule, is to be cleansed with absorbent cotton to the absolute exclusion of syringing or other customary methods of washing out the discharge; next, borax or other antiseptic powder (boracic acid, iodoform, etc.) is to be insufflated. Like all other methods of practice, this one must be modi-

fied according to circumstances that will be more or less self-evident. An old accumulation of inspissated secretion must necessarily be removed by syringing; a very tender ear in a restless child,—such exceptional cases plainly require exceptional treatment. Also, the presence of polypi, dead bone, narrow fistulæ, and other inaccessible seats of disease; all these represent complications to the proper inflammatory condition, and will require modifications of the above stated rule. But there is a large class of cases, including the great majority of the frequently observed acute and chronic aural inflammations with discharge, that will be properly treated according to the dry method.

Bezold, of Munich (*Arch. f. Ohrenheilk.*, June 13, 1879), was the first to insist upon pure antiseptics in the treatment of otorrhea—Listerism introduced into the domain of otology. Bezold's bold departure from established modes of treatment by instillation, he amply justified, and his justification stands. Unfortunately, he did not adopt the full rubric of Listerism, he still used the syringe and ignored the dry method of antiseptic applications. It would take too much space to state in detail the anatomical peculiarities of that remarkable cavity—the tympanum; yet some reference may be excused for the purpose of presenting, in the strongest light, the mischief that the syringe, in aural treatment, is capable of inflicting. The middle ear with its numerous small osseous recesses, its pockets formed by the ossicles and folds of the membrana tympani, to say nothing of the freely communicating mastoid cells, may be regarded as a congeries of small cavities, an arrangement eminently adapted to foster chronic discharge and to frustrate local treatment.

When the ear is syringed, there is always the possibility that the pus may be driven into parts as yet free from disease, parts that, from anatomical reasons just stated, are difficult of access for medical interference. Pus, we know, sometimes is infectious; decomposing pus is irritating. An immediate danger that cannot be overlooked is, that in case of perforation of the petrous or mastoid region, with abscess of the brain, the syringed water may aggravate, or even initiate, cerebral symptoms, and precipitate death. Such abscesses may exist unsuspected; this is well known. Politzer figures such a case in the last edition of his work on the ear. I have found a similar condition at a post-mortem, the cerebral abscess communicating directly through a fistula with the tympanic cavity, the bone demonstrating long-standing disease. Besides these direct risks, syringing is attended by another serious objection, in that it tends to increase the œdema of the parts, or at least cannot be thought to relieve it; the tissues are sodden in the midst of the discharge, and saturated with exudation; this condition is disastrous to rapid recovery. It may be urged that Bezold's saturated boracic acid solution, by osmosis, will deplete the tissues. How far in the end this may be is problematical. Absorbent cotton removes the pus by attraction and not by repulsion, at once avoiding the risk of forcing pus or injected liquids into remote parts, and in no way adding to the existing excess of moisture. Again,

syringing, even when done with great care, sometimes causes vertigo. An obvious pathological reason for not syringing is that application of water is likely to hinder cicatrization, by washing off the newly formed epithelial cells. In dermatology, this fact is well recognized, and made the basis of a law. Briefly stated, the reasons for not using the syringe or other like methods in cleansing an ear from discharge are these:

Irritating secretions are likely to be driven into healthy cavities opening into the tympanum.

Direct pressure may be made upon the brain-tissue through a fistula.

The local œdema is encouraged.

Cicatrization is interfered with.

The absorbent cotton may be aided in cleansing the tympanum by forcing out the pus by the air-douche, acting through the Eustachian tube; or, in case this passage is impervious, the secretions may be drawn into the meatus by gentle suction through a rubber tube, one end of which is lightly pressed into that canal; the suction may alternate with equally gentle insufflation. The cotton is best introduced upon the end of a slender probe, a wisp being twirled about the point, so that the soft cotton shall extend well beyond the metal; thus placed, and carefully inserted into the meatus, the cleansing with cotton is more likely to be an agreeable operation to the patient than otherwise. After the ear has been thus cleansed and dried, and the processes of natural repair have been encouraged to the utmost, shall we next proceed to disturb this state of things by dropping aqueous solutions into the ear when special indications do not exist? (Instillation of alcohol is akin to the dry method, provided the alcohol, after a moment's retention, when it has become diluted through osmosis, is removed.)

In order to avoid the introduction of water into the ear, we may resort to the use of powdered drugs or of medicated cotton. It has been recommended that pledgets of medicated cotton be left in contact with the fundus of the ear to secure constant medication and continuous absorption of the secretions; such a procedure would be in exact accord with the antiseptic method in general surgery, with this fatal distinction, however, in the circumstances of application—in the one case, there is a free surface to be covered with the antiseptic dressing; in the other, we have to do with a long and narrow canal. Unless kept under close supervision, such pledgets will become saturated with the secretions, and prevent free discharge, a disastrous result; also, their presence is that of a foreign body.

By the use of powders in the ear, we can secure antiseptis, and local treatment as well, without incurring the evils just described. Borax, boracic acid, and iodoform are antiseptic powders convenient to use. They are to be puffed into the ear in any desirable quantity through an insufflator: Dr. Burnett suggests a quill scoop that is to be slipped into a rubber tube, which is a simple enough arrangement. I use an insufflator of silver, the scoop part fitting into a collar that is permanently attached to the rubber tube with mouthpiece. As to the choice of powders, I prefer the borax for a routine appli-

cation; it is more readily soluble than boracic acid, and is an energetic fungicide. Dr. Walb, of Bonn (*Centralbl. f. klin. Med.*, 1883, No. 34), states that boracic acid actually encourages the growth of moulds. Besides, it is dispensed in the powder form, while the acid requires to be specially pulverized, a tedious process. As to iodoform, its value is impaired by its pungent odor and little solubility, whereby it clogs the canal if freely used, besides obscuring the field; this last is a serious objection.

The amount of powder to be insufflated at any one time and the frequency must depend upon the case. A small amount of discharge will require only a coating of the fundus in case of tympanic disease, which coating may not entirely dissolve for a day or two; free discharges will require that the canal be well filled daily to insure antiseptis. Of course, the dissolved antiseptic by diffusion will penetrate into the recesses of the tympanum immediately communicating. When the powder remains unchanged day after day, the discharge evidently has ceased; in rare cases, by reason of a very glutinous condition of the diminishing secretion, the powder may become mingled in the scant discharge without entirely dissolving, and the whole will harden together, requiring to be washed out.

To conclude, the dry method, by assisting nature, hastens a cure, and by doing away with repeated syringing and instillations spares both surgeon and patient much inconvenience and loss of time. I repeat, the method is no panacea, only an invaluable addition to our existing therapeutics, and a reform in practice.

CASE OF PROLAPSE OF THE URETHRA.

BY R. H. DAY, M.D.,
OF BATON ROUGE, LA.

PROLAPSUS urethræ is an affection but rarely occurring, so uncommon, indeed, that many physicians of long experience and varied practice have never seen a case; hence its literature is scant and but little known.

I saw my first case a few months since, after being for more than half a century engaged in the general practice of medicine; and I confess that I harbored the opinion that no author had ever written of this disease. Under this belief, I wrote to Prof. S. D. Gross of my case, when I was informed by him that he had treated of it in his work on the *Urinary Organs*, and also in his *System of Surgery*. Upon reference to Prof. Gross's work upon the *Urinary Organs*, I find the following:

"The mucous membrane of the urethra, like that of the bladder, with which it is continuous, is liable to become inverted and prolapsed at the external orifice of the canal. The affection is extremely rare, and is, for obvious reasons, confined to the female sex. No regular account has yet been published of it, as our data are still too limited and imperfect to enable us to do justice to the subject."

Referring to my library, I find that Prof. Thomas, of New York, in his work on the *Diseases of Women*, also speaks of this affection, and says—

"This accident which has likewise been described as procidentia and inversio urethræ, consists of prolapse of the urethral mucous membrane, with proliferation of the underlying connective tissue. It is not commonly met with, but at times produces considerable irritation of the urethra and bladder, and leads to an erroneous diagnosis of irritable caruncle. I have met with it only in adults of enfeebled constitution and advanced age; but Guersant, in the *Révue de Thérapeutique*, declares that he has seen fifteen cases in little girls between two and twelve years of age."

In view of the rarity of this disease, and the little that has been written in elucidation of it, I am induced to report my case with the treatment and result.

On Saturday, the eighth of September last, I was requested to visit a colored girl, aged between six and seven years. On entering the house, the mother informed me that on the Sunday night previous, her little daughter was in great pain, and tried to urinate frequently, that suddenly, while straining over the night-vessel, her womb came down, and that she had been losing blood ever since, like a woman having her *courses* on her.

The little girl was seen that night by a physician. What he did I could not learn, but the child got no better, and suffered during the week with painful and frequent micturition, and painful dysenteric stools. I found her with some fever, perhaps of an irritative character. Yet the tenesmus and the character of her stools led me to prescribe a few doses of calomel and Dover's powder, and quinine to antagonize the malarial element—that I thought I detected in her case.

Examining the vulva I found a dark-red tumor protruding through the labia, covering the clitoris and occluding the ostium vaginæ. It had a rough appearance, was flattened or slightly depressed in the centre with a sort of fimbriated border, and bled upon the slightest touch. I soon satisfied myself that it was not the uterus; first, from its shape, and secondly, by elevating the lower border I could see the ostium vaginæ. I thought it might be a vascular excrescence surrounding the urethral opening, but its granular and villous surface made me doubt the correctness of this view. At any rate I deemed it best for the present simply to sponge the tumor frequently with cold water, and to relieve her general or systemic symptoms.

On the 10th I visited my patient again, and finding her general health better, I made a more thorough examination of the tumor, and diagnosed, beyond a doubt to my mind, that it was prolapsus of the mucous membrane of the urethra, and determined upon an operative procedure for its removal.

On the 13th, assisted by Dr. J. W. Dupree, after again exploring the tumor, and both of us being satisfied that the diagnosis was correct, I proceeded to operate. Anæsthetizing our patient with chloro-

form, Dr. Dupree raised up the everted borders with a pair of dressing forceps, and I passed around its neck, at its narrowest part, a strong, well-waxed silk ligature, and drew it sufficiently tight to produce complete strangulation. I then, with a pair of curved scissors, removed all of the tissue above the ligature, and cauterized the cut surface with the solid nitrate of silver. The ligature was then cut loose and a pledget of absorbent cotton saturated with carbolized oil applied between the labia in contact with the cut-surface, and retained by compress and bandage. The child was kept in bed in a horizontal position, with instructions to reapply the dressings as often as needed.

The next morning I found the little patient suffering great pain from retention of urine. I administered chloroform and drew off a large quantity of urine without any difficulty in introducing the catheter; continued local application, and applied over the vulva and lower part of abdomen a flax-seed poultice. After this there was no further trouble in urinating, and the part rapidly healed. To-day, she continues perfectly well, and upon examination the urethra appears as perfect and natural in appearance as though no operation had been performed.

Now in analyzing this case, there are several questions that naturally and pertinently present themselves.

First, did the protrusion of the urethral mucous membrane suddenly occur on the night of the second of September, as the mother stated? or had the prolapse been progressing for some time previously, unnoticed by the mother, and only discovered on the occasion named, by the sufferings of the child, and perhaps at that time aggravated by the straining efforts induced by her dysenteric condition?

I could not solve these questions satisfactorily to my own mind, though I critically catechized both the mother and the child. If the prolapse previously existed, it was not observed or recognized by either. But it seems almost impossible to conceive that an affection of this kind, and to such an extent, could suddenly take place when we bear in mind the anatomical conformation of the female urethra, and the necessarily limited diameter of its canal, in a child as young as the subject of this accident. It is more reasonable to suppose, that from previous intermittent fever, from which she had suffered during the summer, there was relaxation of all the tissues, and that the urethral mucous membrane, which had been gradually prolapsing unobserved, becoming intensely congested by her bowel complication on the night in question, and was then for the first time discovered.

This view of its origin seems to be justified from the statements of Prof. Thomas, who says: "I have met with it only in adults of enfeebled constitution and advanced age." It is true, that Dr. Thomas does not give the number of his cases, and hence his experience may not be sufficient to justify a positive opinion on this point.

Second, were the operation and its mode of performance, though perfectly successful, the best? This I conceive to be, after all, the most important

question to decide. I confess that at the time I was greatly perplexed in my own mind how I should proceed. Then, I had not consulted my authorities, and if I had ever read what their teachings were, I had forgotten them, and was left to reason the thing out for myself upon general principles.

It was clear, since the prolapsed and hypertrophied urethral mucous membrane, forming a considerable tumor, could not be replaced, its removal was the only alternative. Excision and the ligature were the only methods at my command. By excision, the bleeding might be considerable, requiring torsion or ligature to control it, or involving the use of other expedients, thereby consuming much time. Its removal by ligature would obviate these difficulties, and be equally effective and expeditious. I decided upon the ligature, combined with excision, and was successful.

Since the operation and its results, I have consulted the only two authors in my library who treat of this disease, and I am convinced that my mode of operation was theoretically and surgically correct and proper.

The reader, by reference to Dr. Thomas' work on the *Diseases of Women*, pages 119 and 120, will find a corroboration of my procedure in principle, while the plan which I pursued is much more simple and easy of execution in all its details.

Prof. Gross lays down no specific mode, but says:

"When the disease is obstinate, or has resisted the more ordinary remedies, excision may become necessary, as in the case observed by M. Seruin, already alluded to. Having assured himself, by repeated and careful examinations, that the tumor formed no part of the bladder, but consisted wholly of the mucous membrane of the urethra, he cut it off, without any hesitation, with a bistoury, on a level with the meatus of the tube; a slight hemorrhage ensued, but soon ceased spontaneously, and the cure was as prompt and complete as the operation was easy and simple."

Before I conclude, I will add that, within two weeks of the first case, another was brought under my observation—this, too, in a colored child only fifteen months old—a fine, large child, and in perfect health otherwise. The mother says she has noticed the tumor for several months. The child does not seem to be notably inconvenienced. I made a careful examination, and had no difficulty in detecting its true character.

The meatus urinarius, upon separating the labia, is distinctly seen in the centre of the prolapsed and everted urethral mucous membrane. Laterally, the tumor is slightly compressed, making its longest diameter from the clitoris to the ostium vaginæ. The tumor is small, and gives so little annoyance that I did not feel justified in advising, for the present, its removal. I am trying to effect a cure by astringent applications, and, I think, with diminution of its size.

I am now using a solution of tannic acid in glycerine. I shall watch the case and the results of the treatment, and be governed accordingly, and report the case, if deemed of sufficient interest.

HOSPITAL NOTES.

BELLEVUE HOSPITAL, NEW YORK.

THE TREATMENT OF FRACTURES BY THE PLASTER-OF-PARIS DRESSING.

Reported by J. H. WOODWARD, M.D., House Surgeon.

PLASTER of Paris is most frequently and most successfully used here in the form of the plaster-of-Paris bandage. The bandage should be made of crinoline or cheese-cloth; crinoline will hold more plaster in its meshes, and on that account it is the better material to use. Crinoline (or cheese-cloth) is cut into strips two and a half or three inches wide, and eight or twelve yards long. These strips are rolled up moderately tightly, like the ordinary roller bandage; and while they are being rolled, a thin, even layer of dry plaster of Paris, recently baked, is spread upon the upper surface of the crinoline. The bandage, being thus thoroughly filled with the plaster, is wrapped in a piece of newspaper and placed in a covered tin box, where it can be kept dry until used.

Splints are constructed with this bandage in the manner to be described immediately. For example, simple fractures of the tibia and fibula are often put up within a few hours after admission to the hospital. If the surgeon thinks that there will not be any unusual swelling of the limb, he does not hesitate to apply the immovable splint. In such cases, a very thick layer of ordinary cotton is wrapped about the foot and leg, from the toes to just below the knee. An assistant maintains the bones in good position while the splint is being made. The paper is now removed from the plaster bandage, and it is placed on end in lukewarm water, which is just deep enough to cover the bandage, about a handful of salt having been added to the basinful of water. The bandage is squeezed two or three times to facilitate the entrance of the water into it, and when saturated (*i. e.*, after the lapse of about a minute) it is removed from the water and squeezed as dry as possible. About one foot of it is then unrolled and cut off; the remainder is passed snugly over the layer of cotton, by the figure-of-eight turn, from the toes to just below the knee. The bandage applied thus, should be smoothed with the hands, and dry plaster of Paris may be rubbed into it. A second and a third layer are put on in the same way. Three layers of this bandage make a very firm splint; two layers are quite sufficient for the first splint, if you propose to keep the patient in bed during the first ten days after the receipt of injury. If the limb is considerably swollen, the patient is usually kept in bed until the first splint is loose. Under such circumstances two layers of bandage are sufficient.

Having enveloped the fractured limb in two (or three) layers of the plaster-of-Paris bandage, it is placed upon a soft pillow which is moulded extemporaneously, so that the posterior of the splint will not be flattened or the leg bow backwards. Sand-bags, or some substitute, should be placed beside the leg to keep it quiet and prevent angular deformity, and the foot should be kept flexed upon the leg, either by a sand-bag or some other support. The patient is cautioned to keep very still. This splint, exposed to the air, will harden satisfactorily in from one to three hours.

Unless signs of strangulation of the leg appear, and they must be looked for diligently when this immovable apparatus is applied so early in the case, or the patient complain of unusual pain in the part, the splint may remain upon the leg until it is loose, *i. e.*, for a week or two. It is then cut down with a strong sharp

knife; before cutting, nitric acid may be applied along the line of incision to soften the plaster. Having removed the splint and the cotton, you should examine the limb and correct any deformity. The fractured bones should be maintained in good position by an assistant while the second, and usually final, splint is applied. A roller bandage of old blanket, or of thick flannel, should be passed around the limb in a spiral, covering it from the toes to just below the knee. Then three layers of the plaster-of-Paris bandage are applied by the method already described. The bandage should be laid upon the limb smoothly and snugly. If it is put on lightly, the splint will be loose as soon as the plaster is hard; if it is applied tightly, the veins may be strangulated. Wind the bandage on snugly, and the splint will be a success. This splint should be treated, while the plaster is setting, just as described for the first splint. As soon as the plaster is hard the patient may go about on crutches.

It should be stated that all simple fractures are not put up in these splints as soon as admitted. A large number are treated in that manner, but the majority are not. During the period of inflammation, the injured leg is usually kept in the fracture-box and treated with cold or other astringent applications. As soon as the swelling has subsided the immovable apparatus is put on.

Such is the method of using plaster of Paris in ninety-nine per cent. of all the fractures of the tibia and fibula, femur and humerus that present at Bellevue Hospital. Fractures of the femur are not put up in plaster early in the case, however. The immovable splint is seldom carried above the knee-joint in cases of simple fracture of the tibia and fibula; and, although this practice is contrary to an established rule of surgery, it does not seem to be followed by any bad results.

The plaster-of-Paris bandage is used to make gutter splints and fenestrated splints, both of which are employed in the treatment of a variety of injuries and diseases. Wishing to make a fenestrated splint, we apply the plaster-of-Paris bandage according to the method described. The limb is now completely covered by the bandages, and, when the plaster has dried thoroughly, a fenestrum is cut through the splint with a knife at the proper situation. Fenestrated splints constructed in this manner are extensively employed in the treatment of compound fractures, in cases both in which the wound is small enough to be sealed and in those in which it is large enough to require frequent dressing. The edges of the fenestrum may be protected by rubber-tissue, oiled silk, or any other suitable waterproof material. Should it be necessary to cut a very large fenestrum, strips of iron or zinc are included in the splint in that vicinity to increase the strength of the apparatus. Strips of iron or zinc are also frequently included by the plaster splint, even when it is not fenestrated. Gutter splints especially are strengthened in this way where they cross a joint, and the plaster spica for the hip should always be reinforced in front of the hip-joint by an iron band between the layers of bandage.

The plaster-of-Paris bandage is employed also in manufacturing the bracket splint for compound fractures. That apparatus is quite a favorite one with many surgeons, and is used extensively in the hospitals of New York. In order to construct it, select pieces of hoop-iron about one inch wide and as long as the given case requires. These iron bands, three or four in number, are bent upon themselves, so that, when applied to the limb, the iron will stand away from it above and pass back to it below the wound. The site of fracture is thus bridged across by the irons. One layer, or more, of plaster-of-Paris bandage is then laid upon the limb above and below the seat of injury, and

over the padding of cotton or the blanket roller. The irons are then fitted accurately to the parts and bound firmly to them by a number of layers of the plaster bandage. The splint made in this fashion is allowed to dry, and the case is dressed at the site of the fracture as often as the surgeon desires.

The plaster-of-Paris bandage is often applied outside of the Lister and other closed antiseptic dressings to maintain the limb in good position, both in compound fracture cases and in cases where joints have been operated upon for various diseases. Two layers of the bandage usually suffice, and furnish a very satisfactory apparatus for such cases.

Bavarian splints are seldom used in New York hospitals; but a splint made of plaster of Paris and cheese-cloth is frequently adopted. The advantage presented by this splint over the roller bandage splint is that it hardens in a few minutes, and hence the limb may be held in position by an assistant during the setting of the plaster. Anterior, posterior, and lateral splints are more readily made by this process than by any other that I have seen tried. But the splints are more apt to be worthless than are those made with the bandage, for reasons to be indicated presently.

In order to construct such a splint, you should proceed in the following manner: Suppose that you wish to make anterior and posterior splints for the foot, leg, and lower half of the thigh. For the anterior splint, cut three layers of cheese-cloth long enough to pass from the toes to the middle of the thigh, and wide enough to cover one-half the circumference of the foot, leg, and thigh. Three more layers of cheese-cloth are cut of the same length as the first, but about an inch and a half narrower. Finally, three layers of cheese-cloth two inches wide, of the same length as the former, are prepared. For the posterior splint, cut five or six layers of cheese-cloth wide enough to cover one-half the circumference of the foot, leg, and thigh, and long enough to extend from the toes to the middle of the thigh. Of course, in measuring these strips, allowance must be made for the increase in circumference of the limb made by the dressing and the padding. Having prepared the cheese-cloth, a plaster-of-Paris cream should be made. To prepare this, take the best plaster that can be obtained, and be sure that it is free from dirt and moisture; into a basinful of quite warm water, in which a handful of salt has been dissolved, stir the plaster slowly until a moderately thick cream is made. The anterior splint should be passed through the cream first. Saturate the wider pieces of the cheese-cloth first, and lay them upon the limb and smooth them down nicely; and then saturate the second three layers of the anterior splint with the plaster cream and apply them to the limb. Finally, saturate the narrower strips with the cream, and lay them upon the median line of the former layers and smooth all down nicely, and add more of the cream to the splint with the hands. If you intend to suspend the limb, iron rings should be passed upon the narrowest strips of cheese-cloth before they are applied to the other layers. The posterior splint is now put through the plaster cream and saturated with it; then it is applied to the posterior surface of the foot, leg, and thigh. These manœuvres must be performed with celerity, or the plaster will begin to set before the next step in the process is taken. Such an accident endangers the value of the splint, which is apt to crack at important points, and be weakened thereby. Having placed the anterior and posterior strips upon the limb, they should be held in proper coaptation and bound upon the limb by plain crinoline bandages, which have been moistened. Of course, any description of bandage may be used instead of the crinoline, but the latter, when dry, is quite firm, on account of the starch contained

in it, and is, therefore, better than the ordinary muslin bandages. The limb may be held by assistants for a few minutes until the plaster is dry, or it may be supported on pillows. After the plaster has set, the limb may be supported by slings passed through the iron rings.

This variety of splint is a very excellent one, and is used extensively in the Bellevue Hospital. Now and then, it happens that the plaster will not set; but, if the cream is made of the proper consistency, and of good plaster of Paris, that accident will not occur very often. In mixing the plaster cream, especial care should be taken that it is not made too thick. Instead of cheese-cloth, old blanket, or flannel, or carbolized gauze, or any material which is of coarse texture, may be used in constructing such splints as these. Old blanket is frequently substituted with advantage here, especially when we wish to make a strong posterior splint for the lower extremity.

Such are the methods daily employed in the manufacture of plaster-of-Paris dressings in New York. A very detailed description of the various procedures has been given, because any description of them, to be a reliable guide, must be as specific as possible. The various steps in these processes have been followed by the reporter day after day during the past year, and he has seldom observed the plaster-of-Paris dressing to fail to be satisfactory, when it has been carefully made according to the foregoing plans. And he cannot recall a single instance where harm has resulted to the patient from the immovable apparatus itself.

MEDICAL PROGRESS.

CORROSIVE SUBLIMATE IN PUERPERAL ANTISEPSIS.—PAOLO NEGRI has adopted this agent as an antiseptic at the Maternity at Novare. He finds a solution of one to two thousand sufficiently strong as a rule. During four months at this Maternity, the statistics show not one death among the fifty-one cases; and but very little sickness.

Negri draws the following conclusions:

1. The toxic effects of corrosive sublimate employed in the usual strength, one to fifteen hundred or two thousand, is almost nothing; in one case only, he had slight mercurial exanthema.

2. The solution of the strength of one to two thousand is sufficiently powerful to prevent puerperal sepsis.

3. This solution will completely substitute the two to one hundred solution of carbolic acid generally used.

4. The sublimate has the advantage over carbolic acid of being cheaper, and having no odor; this last consideration being not unimportant in private practice. —*Bull. Gén. de Thérap.*, October 30, 1883.

THE ETIOLOGY AND PATHOGENESIS OF PHTHISIS.—PROF. SORMANI, in an article on this subject, draws the following conclusions:

1. Tubercle bacilli are not found in the breath of phthical persons. 2. The tubercle bacillus is preserved for a long time unaltered in the sputum of phthical patients, resisting putrefaction and desiccation. 3. This bacillus retains its virulence for a long time, but gradually grows more feeble. 4. Tuberculosis acts, therefore, not as a directly contagious disease, but indirectly, by means of the dried tuberculous sputa, pulverized and suspended in the air. 5. The prophylaxis of phthisis should tend to the prompt destruction of tuberculous sputa, and to the efficacious disinfection of chambers by destroying the infecting tuberculous material. —*Annali Univ. di Med. e Chirg.*, Sept. 1883.

MYOMATOUS TUMOR OF THE PROSTATE IN A CHILD THIRTEEN MONTHS OLD.—At the meeting of the St. Louis Medical Society, September 29, 1883, DR. MUDD presented this specimen. The child had been healthy until within a few weeks of the time of its last illness. When Dr. Mudd was called to see the child, it had suffered for several days with retention of urine, passing nothing but a little water at a time; the bladder was very much distended. The child had passed a little water, from time to time, and the mother had not noticed any distention of the bladder. This retention, which came on suddenly, was persistent until death, which occurred about two weeks after he first saw the child. Upon examination of the child before death, by passing the finger into the rectum, he could feel a large tumor presenting anteriorly. The tumor was connected with the bladder, and could be outlined pretty distinctly. He could then determine that it was uniform in its outline, uniform in its consistency, and could feel, after emptying the bladder, by bimanual palpation, the outline of the tumor very distinctly. Upon making the post-mortem examination, he found that the bladder was about as might be expected in a child of thirteen months; but there was a tumor springing apparently from the prostate gland, that was as large as a small lemon, and which presented upon the mucous surface of the bladder—it was a hypertrophy of the middle lobe of the gland, so as completely to occlude the passage of urine. From the microscopic examination, which was made by Dr. Luedeking, it appears that the character of the tumor is a hyperplastic myoma of the prostate gland. The structure of the prostate gland seems to have been lost in the hypertrophy of the muscular tissue—the muscular tissue is non-striated, such as is found in the bladder. It is the opinion of Dr. Luedeking, that the hyperplastic growth may have been developed as an intra-uterine growth. As could be seen upon examination of the specimen, the mass of the tumor would not interfere at all with micturition, the interference coming only from the projection of the third lobe. It is very distinct, and projects as little nodules, cutting off the passage of the water. It is remarkable, from the fact that it comes from so small a child—remarkable by presenting no characteristics of malignancy; simply presenting a hypertrophy of the muscular tissue.

As to the cause of death, he found that the pelvis of the kidney was involved in the inflammatory action, probably from the obstruction to the outflow of urine; the calices of the kidney structure also were involved. He supposed that death occurred from disturbance of the kidney and retention of urine. The appearance of the tumor is very much such as will be found described by Paget as a hypertrophy of the gland in old persons. No such appearance was observed in the child.—*St. Louis Medical and Surgical Journal*, November, 1883.

LARYNGEAL CHOREA.—M. BLACHEZ read a paper on this subject at the meeting of the Académie de Médecine, on October 16th. From his researches on this subject it appears that laryngeal chorea is less rare than is generally supposed. He has seen two cases of the affection in children. The first child, lymphatic and born of an arthritic mother, was taken with a slight laryngitis with spasmodic cough, which presented, every few days, very peculiar characters. There were no choreic phenomena on the part of the limbs; all the movements were regular. Bromide of potassium, valerian, and belladonna, completely failed; chloral alone gave a decisive and rapid result. Two very intense febrile movements came on, and the affection disappeared.

The second child, lympho-anæmic, was taken during the course of a slight bronchitis, with paroxysms char-

acterized by a peculiar piercing cry, somewhat resembling that of a toy goat. The cry came on eight or ten times in a few minutes, and the paroxysms several times during the day. They never came on during sleep. The child was nervous, always agitated, but had no true choreic movements. Large doses of bromide of potassium completely broke up the attacks.

It appears to M. Blachez, then, that bromide of potassium and chloral are to be particularly recommended in laryngeal chorea. He based his diagnosis on the hereditary arthritic antecedents of the two children, on the absence of multiple and varied nervous phenomena, on the integrity of the psychical functions, and on the absolute suspension of the paroxysms during sleep.—*L'Union Méd.*, October 18, 1883.

THE IODOFORM TREATMENT OF RUPTURED PERINEUM.—The short confinement to bed, and the absence of purulent secretion with iodoform dressings, have induced BEHM to follow this method of treating ruptures of the perineum.

The instruments and the wound are first disinfected by means of carbolic acid solution, the lips of the wound are trimmed and bleeding stopped by most careful pressure with wadding pads. If primary union is wished for, he only puts a thin layer of iodoform in the wound; in two cases, in which too much iodoform was used, primary union did not take place.

Two complete, and twenty-eight incomplete ruptures were treated in this manner: Of the first two, one healed without trouble, while the other, dressed thirty-six hours after delivery, after the rectum and bladder were emptied, healed only incompletely, with a recto-vaginal fistula. Of the twenty-eight incomplete ruptures, twenty-three healed by primary union. Behm has had no cases of iodoform intoxication.—*Centralbl. f. Gynäkologie*, August 18, 1883.

CUBITUS VALGUS.—Under this name L. VON LESSER describes a deformity which is somewhat similar to that producing genu valgum. It consists in the production of an obtuse angle, opening posteriorly during forced extension of the forearm on the arm. At the fold of the elbow it makes a projection anteriorly. Posteriorly there also exists an obtuse angle, the summit of which corresponds to the epicondyle, this angle being equally apparent in pronation of the forearm. The olecranon is so closely drawn to the epicondyle that the ulnar nerve is pressed upon in its groove, and in prolonged extension the patient experiences, in the little finger, sensations peculiar to pressure on that nerve. The epitrochlea is situated in a higher plane than is the epicondyle. In forced extension the head of the radius is found pressed posteriorly into a position of subluxation, and its cup is easily felt below the exaggerated projection of the epicondylod muscles.—*Virchow's Archiv*, Bd. xcii. Heft. i.

PHOSPHORUS IN THE TREATMENT OF OSTEOMALACIA.—BUSCH has recently reported two cases of osteomalacia treated by phosphorus. The first was that of a woman, æt. 30 years, who seemed to be in excellent health. The objective symptoms were limited to the bones of the pelvis, which appeared to be involved on both sides. The symphysis pubis projected forward, and the horizontal rami of the pubes were markedly incurvated. The woman was unable to walk, and could only move from the bed to a chair with extreme difficulty. Busch prescribed absolute rest in the horizontal position for three months, giving at the same time Wegner's phosphorus pills. After five months' treatment the patient could go up and down stairs without difficulty. At this time she was lost sight of.

The second patient was a woman, æt. 50 years, who complained of violent pain in the right arm, at the point of insertion of the deltoid. Osteitis was diagnosed, and treated by the ordinary means. There was no amelioration of the symptoms, and she came under Busch's care. She was extremely emaciated, could not walk, and presented many deformities: kyphosis of the spine in the dorsal region, and lordosis of the cervical portion of the vertebral column; the head seemed forced down between the shoulders; the thorax was deformed, the thighs curved, and the pelvis presented the characteristic deformities of osteomalacia. She was put on Wegner's phosphorus pills, and took them for eighteen months. At the end of that time the bones were quite firm, and she could walk without pain.

The formula for Wegner's pills is as follows:

Phosphorus, grs. iv.
Simple Syrup, f3ij ℥xx.

Mix and add—

Powdered Liquorice, ʒijss.
Powdered Gum Arabic, ʒiv.
Powdered Gum Tragacanth, ʒss.

Make 250 pills. S. 2 pills a day.

This dose may be increased.—*Progrès Méd.*, October 27, 1883.

NEURALGIC CILIARY PAIN CURED BY STRETCHING THE NASAL NERVE.—Mr. John Garey reports the following case, coming under the care of Mr. HENRY E. CLARK, at the Glasgow Eye Infirmary.

M. C., æt. 49, presented himself on April 3, 1883, suffering from acute irido-cyclitis in right eye, with considerable muddiness of the vitreous. He stated that he had received a blow on this eye two years previously. He was ordered to have ext. bellad. applied over the supraorbital region, the eye was bandaged, and a purgative administered; he was instructed to bathe the eye frequently with the compound lotion used in this institution. On his return the following week he complained of very severe supraorbital pain, extending as far as the crown of the head; the pupil did not yield to the action of atropine, and the ciliary region was very sensitive to the touch. He was ordered to take one grain of calomel and half a grain of opium every night at bedtime. Three days later, the pain not having appreciably diminished by this treatment, the artificial leech was applied over the right temple, and a small quantity of blood abstracted; from this he experienced considerable relief, but it proved to be only temporary in character, and in a few days the pain returned with all its former intensity. It had now certain neuralgic features, and was distinctly intermittent, commencing generally about five o'clock in the morning and disappearing about two in the afternoon. He was put on phosphorus pills (B. P.), 10th grain every six hours, and under this treatment the pain soon disappeared, and he was sent to Dunoon Convalescent Home. While there he for a time continued well, but on catching a slight cold, the affection became lighted up afresh, and he was compelled to return before the expiration of his term there to undergo further treatment. We administered full doses of bromide of potassium, and kept him at rest in bed, but with no lessening of the pain; free phosphorus was again tried, and persevered in for twelve days, but it appeared entirely to have lost its influence. Mr. Clark now suggested stretching the nasal nerve, and the patient being willing to submit to anything that offered a chance of relief, the operation was performed on August 1st, without the aid of an anæsthetic. An incision about one inch in length was made in the upper eye-

lid, running obliquely downwards and inwards, from the level of the pulley of the superior oblique nearly to the inner canthus. The orbital periosteum being exposed, a strabismus hook was carried backwards close to the bone, and after one or two abortive attempts the nerve was caught in the hook and drawn forwards. It was fully exposed, so as to make quite sure that the right structure was being pulled, and pretty firm traction was made on it in the axis of the inner wall of the orbit. This part of the operation caused most excruciating pain to the patient. The wound was brought together with sutures, and dressed with boracic lint; it healed kindly in the course of a few days, and he was dismissed on August 6th, the neuralgic pain having entirely disappeared. Since that time he has had no return of the neuralgia, and the eye retains a fair perception of light, but the pupil being almost closed, it will be necessary to perform an iridectomy at a later date.

The connection of the nasal nerve with the nutrition of the eyeball has so long been recognized, that we can quite understand that some change will be produced in the nutrition by the elongation of that nerve, but we are as much in want of anything like a plausible theory of the exact mechanism by which such change is brought about in this instance as in other cases of nerve-stretching. That the operation is attended with much improvement of the condition of the patient is evidenced, not by this case alone, but by numerous others very similar in their nature, and it seems to be especially effective where the pain is very acute and very persistent.—*Glasgow Med. Journ.*, Nov. 1883.

ECTOPIA CORDIS.—M. MAREY read a report, at the meeting of the Académie de Médecine, on October 16th, of a case of ectopia of the heart observed in a woman under Prof. Tarnier's care.

The woman presented a congenital division of the sternum and diaphragm, with eventration and congenital hernia. The bifid condition of the sternum enabled the examiner to see the ventricles under the skin; their greater axis was almost vertical. The right was more accessible; the flaccidity of the skin enabled him to seize the ventricular mass in the hands and to compress the aorta.

By auscultation a systolic souffle could be heard, which appeared to correspond to a narrowing of the root of the aorta; in other respects the functional action of the heart appeared to be normal. Inspection alone of the heart's movements would seem to show that the sudden ventricular diastole caused the heart beats, but the placing of the finger on the ventricle showed that the pulsation takes place during the ventricular systole. The registration of the pulsations of the heart showed that the ventricles are synchronous as to their action, except when irregularities of their rhythm were produced; that the pulsation coincided with the diminution of the volume of the ventricles, and consequently with the time of the ventricular systole.—*L'Union Méd.*, October 18, 1883.

A CASE OF WANDERING LIVER.—DR. FELIX SCHWARZ reported a case before the k. k. Gesellschaft der Aerzte, in Vienna, on June 8th. He believed that he was supported in his diagnosis by the symptoms of the case, which are:

1. When the liver is entirely sunken downward—the absolute liver-dulness begins, while the thorax is in the position of expiration, in the right mammary line at the upper border of the seventh rib, and reaches four inches beyond the free border of the ribs. In inspiration absolute liver-dulness begins in the right mammary line at the free border of the ribs; percussion is

somewhat tympanitic in the sixth intercostal space; there is a clear tympanitic note in the fifth interspace, and from the fifth upward there is normal pulmonary resonance. Between the border of the ribs and the left lobe of the liver, during inspiration, is a furrow one inch wide, running toward the left hypochondrium, which gives a dull tympanitic percussion.

2. The smooth upper surface, the sharp border, and the longitudinal fissure of the liver can be easily felt in the mesogastrium.

3. On the liver being replaced the liver-dulness begins at the fifth rib, and extends a little over one inch below the free border of the ribs in the right mammary line. In the right parasternal line it extends three inches beyond the free edge of the ribs, in contrast with five inches in the displaced state.

4. The liver is movable, not only upward, but to the right and left. When the patient lies on the left side the liver falls toward that side, and the greater part of the right lobe can be felt in the scrobiculum cordis. Finally the liver can be forced into the right hypochondrium without much opposition on the part of the organ. The fifth symptom, relaxation of the abdominal walls, did not exist in Schwarz's case; on the contrary, the standing posture made the walls so tense that an examination could only be made in the horizontal position.

There are fifteen cases of wandering liver reported in literature, thirteen in females, and two insufficiently described cases in males.—*Wien. Med. Presse*, No. 24, 1883.

PARENCHYMATOUS INJECTIONS IN UTERINE AFFECTIONS.—DR. ADRIAN SCHUECKING describes the following method of making parenchymatous injections into the uterine tissue:

After having introduced a speculum into the vagina, and fixed the neck of the uterus, he forces into one of the lips of the cervix a long syringe-needle. Before and after the injection, the cervix is washed with a disinfecting solution. He has never seen any undesirable consequences after this procedure. The slight hemorrhage caused by the needle he regards as rather advantageous than otherwise; in fact, more useful than scarification.

Schücking thinks that parenchymatous injections should be substituted, in gynecology, for the subcutaneous method, being more convenient and efficacious. Immediately after the injection, the cervix is seen to become pale, and diminished in size. There can be no doubt of the absorption of the injected medicine, for one patient stated that the distinct metallic taste was perceived as soon as when the substance was given hypodermatically.

Thus far Schücking has used parenchymatous injections in the following affections:

1. Uterine fibroma—four cases—while the action of ergotine given hypodermatically seemed to be doubtful, after about twenty parenchymatous injections, he constantly noticed either a diminution of the hemorrhage or in the size of the tumor, or both.

2. Incomplete puerperal involution causing prolapse and retroflexion of the uterus. By injecting, three times a week, half a syringe of an aqueous solution of Fowler's solution (1-3), he has seen the uterus regain its normal position after about fourteen injections.

3. Erosions with hypertrophy of the cervical glands—eight cases—interstitial injections of tincture of iodine, combined with touching the cervix with pure acetic acid, caused much more rapid recoveries than when the acetic acid alone was used.

4. One case of exudation into the broad ligaments.—*Berlin. klin. Woch.*, July 2, 1883.

THE ORIGIN OF VACCINIA.—M. WARLOMONT, of Brussels, read a paper on this subject before the Académie de Médecine, on October 16, drawing the following conclusions: 1. Neither horses, cows, nor any other animals can be considered as vaccinogenous. Neither horses nor cows can directly give rise to horsepox and cowpox; either must have previously received the originating germ. 2. The original cause of vaccinia, in its relation to the cow and horse, is nothing else than variola; introduced into the organisms of these animals, it there undergoes an attenuation resulting in vaccinia. 3. This attenuation is less in the case of horses than of cows; consequently, horsepox more nearly approaches the character of variola. 4. The horse is, therefore, less fitted for the culture of vaccinia. 5. Artificial variolic or vaccinal impregnation in the horse by inoculation or intra-cutaneous injection, seems to be produced very much as in the case of the cow, and immunity should be the result of this impregnation.—*L'Union Méd.*, October 18, 1883.

INTRAPULMONARY INJECTIONS IN BRONCHIECTASIS.—DR. O. SEIFERT has made intrathoracic injections of $\frac{1}{4}$ xxx of a three per cent. carbolic solution, in cases of two patients affected with bronchiectasis. In the first case inhalations of spirits of turpentine, perchloride of iron, tannin, and carbolic acid had been tried without any good result. After each injection it was evident that the expectoration had completely lost its fetid odor and had diminished in quantity.

The second patient died in the hospital. Seifert made a post-mortem examination with the view of noting the traces left by the injections. On a level with the site of the last injection, made two days before death, there was found, on the pulmonary pleura, a spot of hemorrhagic infiltration with a central point corresponding to the prick of the instrument. The traces of the other three injections made on the sixth and fourth days before death were only shown by a slight pleural pigmentation. It is evident, therefore, that no injurious effects follow from these punctures. They are only very slightly painful, only cause cough when thrown into moderately large cavities, and cause no rise of temperature.—*Berlin. klin. Woch.*, June 11, 1883.

POISONING BY COAL GAS.—In connection with the recent Hygienic Exhibition at Berlin, popular lectures were given from time to time by various eminent men upon important matters of public health. One of the last so delivered was by PROF. PETTENKOFER, who chose for his subject coal-gas poisoning. After pointing out that the products of the burning of gas were no more noxious than the exhalations of human beings, and that really gas illumination did not consume so much oxygen as an equivalent number of wax candles would do, he passed to his main thesis, which was the poisonous action of the gas itself. The escape of gas in a house can be readily and at once detected by its peculiar odor, but it is otherwise when the escape takes place in the ground from breakage of the mains, whence it finds its way into the basements of houses. The evil effects of such escape had been exemplified in Italy, in Cologne, and in Breslau, and he believed that such cases were far more frequent than is supposed. The poisonous property of coal gas depends upon its containing carbonic oxide (viz., ten per cent.), the other constituents, although irrespirable, not acting as direct poisons. From Grube's researches it is evident that the danger of this gas depends not so much upon long exposure to a mixture of air and carbonic oxide, as upon the amount of the latter contained in the air. Air containing a proportion of five parts of carbonic

oxide in ten thousand can be breathed for hours and even days by men and animals without any injury to health; whilst a proportion of seven or eight in ten thousand causes appreciable discomfort; of twenty in ten thousand, difficulty of breathing, weakness and uncertainty in gait; twice that proportion leads to stupefaction, and higher proportions to extreme and fatal effects, referable to the nervous system. The occurrence of cases of illness directly attributed to the entrance of gas into houses from the mains has been found to increase in the winter months, a fact partly explained by the more frequent breakage of the pipes in that season, and also perhaps by the closing of windows and artificial heating of rooms, inviting the accumulation and entrance of the gas from without. Gas thus filtered through the soil may be quite odorless, at any rate until it has collected in large amount; and herein lies the danger to the dwellers in the basement of a house. On the earliest occurrence of symptoms such as headache, the windows should be thrown open, and if on their closure the symptoms reappear, it may be suspected that there is an escape of gas near the house. The mains should be examined and the defects repaired without delay; but Professor Pettenkofer urged that it would be well that the police should warn all the inhabitants of houses in the vicinity to see that their rooms were kept thoroughly ventilated. For when the gas remains in the soil it may again find its way into houses when the rooms are artificially heated in the cold season. In conclusion, he remarked that he had chosen this subject for his lecture to show how important it was in hygienic inquiry to pay attention to minutiae; and he urged that every university should have attached to it a hygienic institute, such as Munich and Leipzig possessed, and as Göttingen was about to have.—*Lancet*, November 10, 1883.

CYSTICERCUS OF THE BREAST.—M. GUERMONPREZ publishes an interesting case of this rare effection in the *Lyon Médical*, of September 16th.

In his *Thèse d'Aggrégation*, Paris, 1878 (Des tumeurs kystiques de la mamelle), M. Richelot has distinguished glandular cysts, which he calls independent, that is to say, which are developed either at the circumference of, or in the glandular tissue, but which are developed in the mammary glands in the same manner as in the other places.

The patient whose case came under the observation of M. Guérmonprez, was twenty-nine years of age, and presented a fluctuating tumor at the upper and internal part of the left breast. Into the inflammatory swelling puncture was made by means of a bistoury in the central part, which caused three different materials to flow out: first a copious amount of thick serum, then a cyst, and finally a considerable amount of pus. The operation was performed on March 25th, and the woman was completely well about the last of April.

The cyst was provided with a single wall, very thin, and could be stretched out on a table, like an incompletely filled bladder. When stretched out it formed a sort of disk, the diameter of which was about one and a half inches; its volume was six cubic centimetres. The color of the pouch and its contents was a greenish-yellow. The surface, generally opalescent, showed at one point a single spot of milky-whiteness with diffuse borders which gradually blended with the rest of the mass. This part, examined by a magnifying glass, showed a vermiform organ, the various parts of which were more or less sheathed in one another. These were separated by methodical compression and teasing. Under the microscope it was easy to recognize all the characters of the cysticercus.—*L'Union Méd.*, October 18, 1883.

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SATURDAY, DECEMBER 1, 1883.

WIRING THE FRACTURED PATELLA.

In *The Lancet* for November 3, 1883, MR. LISTER gives the details of seven cases of fractured patella, in which he was uniformly successful in securing union and a good use of the joint, by approximating the fragments with stout silver wire. The operation is done briefly as follows: A longitudinal incision is made over the patella; firm or soft coagula, or fibrous or ligamentous tissue, are removed; the fragments are freshened, and pierced obliquely with an ordinary bradawl, without penetrating the cartilage; a drain is inserted into the joint; the ends of the wire are secured with a twist, and the latter hammered down upon the bone, with a view to its permanent retention; and the limb, enveloped in an antiseptic dressing, is placed in the trough of Gooch's splint.

Mr. Lister claims that the mode of treatment which he recommends "restores the joint to practically a perfectly natural condition, provided that no disaster occurs," and he warmly urges that it should be pressed upon the patient, if strict antiseptic precautions be carried out, through which accidents will be prevented. He, moreover, states that "we are morally certain that we do not subject the patient to risk," because, "if there is in the whole body a situation which is well adapted for antiseptic treatment, it is this." "I believe," he adds, "that if we use the means that we have now at our disposal, we may say, with a safe conscience, if we use them aright, that we do not subject the patient to anything like so great a risk as people

used to be subjected to, not many years ago, when they had fatty tumors removed in general hospitals."

So far as the personal experience of Mr. Lister warrants him in speaking, his successes justify the emphatic language that he employs; but, as we shall show presently, a more extended record of antiseptic suturing of the patella does not confirm his positive assertions. Dogmatism is all very well in its way, but surgeons who occupy the high rank that Mr. Lister does should be very careful in their efforts to inculcate doctrines which are based upon a too limited test. Had he studied the reports of cases in the hands of other surgeons, we feel convinced that he would have been more guarded in his expressions, and would never have penned the words, "Antiseptic treatment converts serious evil into complete safety." It will not do to put forward the excuse for the failures that antiseptic measures were not properly employed, as the operators mentioned in the succeeding paragraphs, in connection with the bad results, are too well known to be accused of negligence.

Antiseptic suturing of the patella has now been done 49 times; the surgeons having been Lister in 7 cases, Koenig in 4 cases, Trendelenburg in 3 cases, Cameron, Jessop, Rose, Rosenbach, Wheelhouse, and Schede, each in 2 cases, and Amphlett, Bell, Bull, Dicken, Fowler, Goering, Hartwich, Holmes, Langenbeck, Langenbuch, Lauenstein, Metzler, Poncet, Sabine, Schneider, Henry Smith, Socin, Teale, Timme, Uhde, Van der Meulen, Wahl, and Wyeth, each in 1 case.

In the single cases of Bull, Dicken, Von Langenbeck, and Wyeth, in Schede's 2 cases, and in 2 of Koenig's, the joint suppurated. Of these 8 examples, that of Bull died of exhaustion on the fourteenth day; that of Von Langenbeck died of pyæmia, after amputation of the thigh, on the sixteenth day; and the case of Wyeth recovered after amputation of the thigh; while the remainder got well with stiff joints, the upper fragment having died in Koenig's fourth case.

In addition to these accidents, there was partial necrosis of the lower fragment in the case of Wahl, and the patient of Fowler perished of carbolic acid poisoning in thirty-one hours.

The results of the operation show, therefore, 16.3 per cent. of suppuration of the knee-joint; 6.12 per cent. of deaths; 4 per cent. of necrosis of the fragments; and 4 per cent. of amputation of the thigh; results which completely negative the dogmatic assertion of Mr. Lister that, "Antiseptic treatment converts serious evil into complete safety." In favor of the operation it must, however, be said that the large majority recovered with bony union and with excellent use of the joint.

From the remarks of Mr. Lister, one would naturally infer that Dr. Cameron, of Glasgow, took the initiative in suturing the broken patella, in 1877. It was, however, first done by Dr. John Rhea Barton, of this city, more than fifty years ago, and repeated by McClellan in 1838, by Cooper, of San Francisco, in 1861, and by Logan, of Sacramento, in 1864. A fourth operation, before the introduction of antiseptic surgery, was performed by Gunn, of Chicago. Of the four, those of Barton and Gunn perished.

HYSTERICAL FEVER.

DR. BRIAND, in a recent number of the *Gazette Hebdomadaire*, maintains, with Gubler, Rigal, Dieulafoy, and others, that the term hysterical fever should be applied to certain conditions of actual fever which cannot be referred to any other cause than the hysterical affection itself. Three forms are described: 1. The slow continued fever of Briquet, characterized sometimes by a simple acceleration of the pulse, *without elevation of temperature*, sometimes by a temperature rise, either without other phenomena or accompanied by headache, thirst, and other symptoms. 2. A shorter form, always the result of a more or less active disturbance of the nervous system by terror, fear, chagrin, and like causes, occurs in well-marked neuropathic subjects. Examples of this variety have been described by Graves, Briquet, and Bouchut; and the following typical case is related: A young girl after intense fright, was seized with severe fever which lasted ten days, and in which the temperature reached 103.1° F. Sudden defervescence ushered in a series of phenomena characteristic of hysteria. 3. The febrile phenomena sometimes assume the intermittent form. In three examples of this variety, Briand observed respectively temperatures of 100.6° F., of 100° F., and of 100.2° F., and in a single case reported by Charcot, the temperature attained 101.3° F.

On the other hand, M. HENRY PINARD, in a thesis presented this year to the Paris Faculty, without denying absolutely the occurrence of a true hysterical fever, describes the so-called intermittent variety as a pseudo-fever, at the same time declaring that the first and second of the above forms have no existence whatever as direct manifestations of hysteria.

This view, in which we concur, accords more closely than the other with the known facts concerning hysteria. That febrile phenomena should occasionally occur as secondary to hysterical outbreaks, in consequence of violent and prolonged muscular effort, or of local injuries, is altogether probable. That intercurrent affections, such as enteric or intermittent fever occurring in hysterical

subjects, present peculiar modifications is well known. But that febrile conditions resembling these affections are the direct outcome of hysteria is far from being established. A much greater collection of closely observed cases, in which accidental and intercurrent febrile manifestations have been rigidly excluded, than has yet been made, would be needed to give any sanction of right to the use of the term, hysterical fever.

THE REMOVAL OF NEOPLASMS OF THE BLADDER.

IN THE MEDICAL NEWS for August 11, 1883, we directed attention to the operative treatment of tumors of the bladder, and showed that, in view of the dangerous condition to which the subjects are reduced, their removal was perfectly justifiable. We also protested against the exclusive use of the forceps, as recommended by a distinguished London specialist, which are not only almost worthless except for pedunculated growths, but the resort to which is attended with the risk of lacerating the bladder. For these reasons we advised the employment of the sharp spoon, with which the base of the neoplasm can be successfully attacked.

In *The Lancet* for October 6, 13, and 20, will be found a series of papers from the pen of Mr. Walter Whitehead, of Manchester, in which the details of six cases are given, which confirm the views we expressed in regard to scraping away vesical neoplasms. In five the spoon was employed, and all the patients, of whom four were males and two were females, recovered from the immediate effects of the operation. Four recovered completely, while two died, each at the expiration of three months. In one the growth had been completely removed, and the bladder was perfectly healthy; while in the second case, in which the papillated surface of an epithelioma behind the pubes was scraped away with the fingernail, there was no return of spontaneous hemorrhage.

THE MICROCOCCUS OF SCARLET FEVER.

M. POHN-PINCUS, in the *Gazette Médicale de Paris* of Sept. 29, states his belief that he has discovered, in the desquamating epidermis of scarlet fever, micrococci which are the germs of this disease. He demonstrates them by partially detaching with scissors a lamella of the epidermis, but so that it shall be still adherent by a great part of its periphery. He then applies to the under surface of the detached portion a few drops of a saturated alcoholic solution of methyl-violet. In a few minutes he scrapes off, with the aid of a cataract needle, some little fragments of tissue, and immerses them for a short time in distilled water; subsequently he places them upon a glass slide, teases them out as finely as possible with needles, and warms the object

glass until the preparation is dry. He then adds a drop of oil of cloves, and covers the whole with Canada balsam.

The micrococci will be stained violet. M. Pohn-Pincus says their dimensions are very small, but measurements are not given. They are united in small groups and are found in the depressions upon the borders of the detached cells. No attempt has yet been made to cultivate these micro-organisms or to inoculate them.

PREVENTIVE INOCULATION OF SCARLATINA WITH SCARLATINAL VIRUS DERIVED FROM A HORSE.

In the *Gazette Médicale de Paris* of Sept. 29th, M. STICKLER reports the result of some inoculations with nasal mucus of a horse suffering with an affection which was believed to be identical with human scarlatina.

M. Stickler inserted about six drops of this mucus under the skin of four rabbits and a dog. Twenty-four hours later, these animals presented a decidedly confluent scarlatiniform exanthem, which terminated in four days in a lamelliform desquamation. This eruption was accompanied with fever, anorexia, and redness of the nasal mucous membrane, which was also the seat of an abundant secretion. In the neighborhood of the inoculation, the glands were engorged. At the end of eight days the animals had recovered. The daily examination of the blood showed an increased number of leucocytes, and, on the third day, were noted little rounded distinct granules adherent to the white globules; these had disappeared on the sixth day. Seven days later, he injected under the skin of the same animals blood from a case of confluent scarlatina, and the inoculation was followed by no results.

Again, he inoculated with the same nasal mucus twelve children who had never had scarlet fever. In all of these children a punctiform eruption appeared within twenty-four hours at the point of inoculations, accompanied with fever and enlargement of neighboring glands. The eruption lasted six days, and terminated in desquamation. After an interval of a few days, he inoculated the same children with some drops of scarlatinal blood, with absolutely negative results.

M. Stickler concludes from these experiments that the subcutaneous injection of scarlatinal virus derived from a horse is not followed by harmful results; that inoculation of this virus in man is followed by a circumscribed eruption like that observed in mild scarlet fever; and that this inoculation confers an immunity against scarlatina.

CREASOTE IN PULMONARY AFFECTIONS.

In the *Journal de Thérapeutique* for September 25, 1883, DR. REUSS publishes some remarkable

statistics, proving the great value of creasote in phthisis, and in acute affections of the respiratory organs after the active symptoms have subsided. In chronic bronchitis, in humid catarrh, and in the after-stage of acute bronchitis, he has had the most fortunate results, but his statistics show that in phthisis the most surprising success has been obtained. Thus, in his last series of 60 cases of tuberculosis, there were 25 cases of apparent cure, 20 of these being in the first stage and 5 in the second, but none in the third. The improved were 20 in number, and of these 3 were in the first stage, and 17 in the second stage of the disease. He cites, in the course of the paper, several cases in illustration of his statistical data.

Creasote is administered in pill with balsam of tolu. He gives it for months without interruption in the dose of 40 to 50 centigrammes a day, or 5 to 8 grains. He conjoins the use of tonic medicines and arsenic, the latter especially being very useful, but attributes the disappearance of the pulmonary diseases to the creasote, maintaining that there is a regression, merely, of tuberculosis—an apparent cure—and that the patient is liable to relapses.

What is the mode of action? Dr. Reuss is disposed to attribute the curative effect of his combination of creasote and balsam of tolu to the cicatrizing and desiccating effect of the former and the balsamic and respiratory properties of the latter. If, however, phthisis is a parasitic disease, the effect of creasote may be referred to its action on the microbe of tubercle.

A NEW SYMPTOM OF FATTY INFILTRATION OF THE LIVER.

LEPINE and EYMONNET have recently communicated to the Society of Medical Sciences, of Lyons, a new symptom of fatty degeneration of the liver. If urine be freed from its phosphates by a magnesian mixture or baryta, evaporated, and the residue ignited with nitrate of potassium and treated with acidulated water, the solution will contain traces of phosphoric acid. This is derived from the glycerin-phosphoric acid contained in normal urine, and is a constituent of lecithin. In several cases of fatty liver, these observers found this secondary phosphoric acid increased five to tenfold, which is in accord with the fact that a considerable quantity of lecithin, as much as three per cent., is found in fatty liver.

THE NEW SURGEON-GENERAL U. S. ARMY.

AFTER an unusually long delay The President has appointed as Surgeon-General U. S. Army, to fill the vacancy created by the death of General Crane, Dr. Robert Murray, the Senior Medical Officer of the Corps.

Dr. Murray is a native of Maryland, and having been born in August, 1822, has yet a little over two and a half years to serve before reaching sixty-four years, the age of compulsory retirement. He was appointed Assistant Surgeon U. S. Army in 1846, and after a few months' service at Fort Geatint, Michigan, was transferred to California, where he served successively at Los Angeles, Monterey, and Camp Far West, until the fall of 1850. He then served at Fort Independence, Boston, and in New York City, until April, 1854, when he went to California. He was commissioned Surgeon United States Army, June, 1860. During the war he was Medical Director and Purveyor of the Department of the Cumberland until 1862, and then Medical Purveyor at Philadelphia until 1865, Medical Purveyor Military Division of the Pacific, San Francisco. Lieutenant-Colonel and Assistant Medical Purveyor U. S. Army, July, 1866. Was brevetted Lieutenant-Colonel and Colonel U. S. Army, for faithful and meritorious services during the war. Medical Purveyor at San Francisco, Cal., September 30, 1865 (commissioned Assistant Medical Purveyor, U. S. Army, July 28, 1866), to March 13, 1877. On duty at San Francisco, Cal., examining quality and condition of medical supplies at Purveying Depot, and awaiting orders March 13, 1877, to January 2, 1878.

Medical Director, Division of the Missouri, January 2, 1878 to September 4, 1882. Medical Director, Division of the Atlantic and Department of the East, September 7, 1882, to present date.

This appointment creates a vacancy in the office of Assistant Surgeon-General, which by regular promotion, will be filled by the appointment of Col. Charles Sutherland, Surgeon U. S. A.

POISONOUS PAPERS IN THE KINDERGARTEN.

IN the issue of THE MEDICAL NEWS for March 24th we called attention to the danger arising from the use of arsenical papers in the kindergarten. We are gratified to learn as the result of this, and of the consequent agitation of the matter, both here and in Boston, that these kindergarten papers can now be had free from all poisonous properties.

The trouble seems to be further back than the manufacturers of the papers, and exists with the color-makers. Colors even guaranteed by the makers to be free from arsenic were found to be largely made up of that poison, and many colors heretofore harmless are now being made from arsenic. Both greens and reds, and even blues, purples, and other colors are now very frequently arsenical to such an extent as to be very dangerous.

So true is this of wall papers, that we would advise having all such papers tested by a competent chemist before having them hung.

We are very glad to learn that through the efforts of one of the makers of kindergarten papers, Messrs. Milton Bradley & Co., of Springfield, Mass., all their poisonous papers have been replaced by harmless ones. They guarantee them absolutely pure, and analyses made by Prof. Henry Leffman have demonstrated the correctness of their statements. In this city these papers can be had of the Friends' Book Association, 1020 Arch Street. We strongly advise kindergartens not to use papers that have not been previously tested and found free from arsenic. This is a matter which concerns every parent, and we trust that the daily press will call attention to the risks run by kindergarten children from this cause, and the ready method by which they may be avoided.

MEDICAL REFORM.

THE practical tendency of New Code medical reform is illustrated in the contribution to the columns of a New York contemporary, of a letter from a Thompsonian "Professor" of Cincinnati, who advocates a State Board of Examiners, and a high standard of acquirement. The medical college in which this botanical or steam doctor exercises his professorial privileges, is a "chartered institution" and as legal as the best of them, and is surpassed by none in the liberality of its teachings and in the elasticity of its requirements for graduation. They are for reform in the Physio-Medical College of Cincinnati. They are opposed to all restrictions on consultations, and hence approve of the New York Code, and that free trade in medicine which is limited only to chartered institutions and legalized practitioners. They favor a State Board of Examiners in the interests of a higher medical education, and, secure in the learning of the Thompsonian school, they simply require as a condition of their acceptance of the proposed scheme that the Examiners shall be representative men of the steam system. They, too, wish that the requirements for admission to the medical profession be of the loftiest description—that those who aspire to begin the study shall be able to read the Constitution, cipher as far as the "rule of three," and translate *E Pluribus Unum*, and that those admitted to graduation shall have attended a six week's term in the Physio-Medical College, in the course of which they learn the "sanative" virtues of lobelia, the composition of "number six," and the horrors of "calamy" and "old-school" physic.

The "Physio-Medicalists" are for the New Code and reform. They have taken the field against old-school fanaticism and intolerance. They have taken their stand by the side of our New York contemporary and reform. The world is tired of old physic, and clamors for the new—the Physio-Medi-

cal comes to the front. The effete institutions under "allopathic" control must conform to the spirit of the age, and adopt the steam-box, lobelia, and "number six!"

The Medical Record takes exception at the figures put forth by the Central Organization of the New York State Medical Association to uphold the National Code of Ethics, and endeavors to throw discredit upon them. Then, assuming a reversal of the figures to be correct, it asks "will a minority of the profession continue to try and force upon the majority the enactment of a disciplinary by-law, which accomplished nothing but to lower the physician in public esteem?"

REVIEWS.

A MANUAL OF AUSCULTATION AND PERCUSSION; EMBRACING THE PHYSICAL DIAGNOSIS OF DISEASES OF THE LUNGS AND HEART, AND OF THORACIC ANEURISM. By AUSTIN FLINT, M.D., etc. Third edition, revised. 8vo. pp. 242. Philadelphia: Henry C. Lea's Son & Co., 1883.

THAT a new edition of this useful little work has so soon come before us, is a hopeful sign of the times. The last generation of practitioners to whom physical diagnosis was a new-fangled art, rests from its labors. To the doctor of to-day, percussion and auscultation are essential, and their acquirement has become a necessary part of his training. To this state of affairs no worker living has contributed so much as Austin Flint. The light kindled by Auenbrugger, and handed on by Piorry, Laennec, Skoda, Wintrich, Williams, he caught and tended till its radiance not only lights up our western world, but is reflected back to the old world whence it came. Out of confusion he has by his analytical method brought clearness, and many signs that at one time served merely as subjects for learned and often pointless discussion, he has made available to the every-day practitioner for the diagnosis of disease. In the present edition the changes are few and for the most part of the nature of further illustration of difficult points. The modes by which pulmonary signs may be reproduced in the lungs removed from the body and by artificial means, are among them.

THE ESSENTIALS OF BANDAGING, ETC. By BERKELEY HILL, M.B., London, F.R.C.S. Fifth Edition. New York: J. H. Vail & Co.

THE first section of this work which treats of the subject of bandaging, is one which probably to the American reader will seem most incomplete, for we notice the absence of many useful and ingenious bandages which are very generally used by surgeons on this side of the Atlantic.

This defect is not so noticeable in the next section which treats of fracture dressings, for here many American methods of treatment are described at length.

The use of plaster of Paris in the treatment of fractures, and the use of Sayre's plaster jacket in Pott's disease of the spine, receive each an extended notice.

The various surgical procedures such as venesection, transfusion, introduction of catheters and bougies, plugging the nares, etc., are clearly and briefly described, and in many cases well illustrated. In dis-

cussing the subject of anæsthetics, p. 222, the author makes a statement in regard to the general safety of chloroform from which we must strongly dissent. One of the most interesting and instructive chapters in the work is that treating of surgical landmarks; this of itself would be sufficient to recommend the work to a most favorable notice. The book contains so much valuable information that we can readily understand the favorable reception with which it has met at the hands of the medical profession and students which has necessitated the appearance of this, its fifth edition.

BURR'S INDEX TO MEDICAL SUBJECTS. Adapted to the Special Use of Physicians and Surgeons. Manufactured by the Burr Index Company, Hartford, Conn.

THE *Medical Index*, manufactured by the Burr Index Company, of Hartford, Conn., is by far the most convenient and valuable work of the kind that we have ever seen. The different amounts of spacing under the same letter are most judiciously arranged; all words entered are indexed by the first two letters; and the references are rendered especially easy by notches cut in the edges of the leaves, through which, when the index is opened at any letter of the alphabet, the combinations of each letter appear in full. The projecting alphabet, printed in golden letters on morocco leather, moreover, greatly facilitates the finding of the location of the headings, as it does away with the necessity of turning over the leaves. From the short trial that we have made of it, we have no hesitation in declaring that it admirably fills a need that we have long felt.

SOCIETY PROCEEDINGS.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, November 7, 1883.

THE PRESIDENT, ALFRED STILLÉ, M.D., IN THE CHAIR.

DR. ROBERTS BARTHOLOW read a paper entitled
ENTERIC PARAPLEGIA.

By the term enteric paraplegia, he said, I intend to express the conception of a spinal paralysis, produced by an intestinal disorder. It is a truly reflex paralysis. The fact of the existence of such a malady is denied by many, and indeed most of the reported examples will not bear careful inspection, for it will be found, as I shall show, that they are really cases of ascending neuritis. Eliminating such from the examples of true reflex paraplegia to be found recorded, I intend to place the latter in a special group composed of cases presenting the symptoms of an enteric disease, during the course of which, a motor and sensory paraplegia manifests itself, and pursues a course obviously dependent on the original lesions. The cases I have lately seen occurred in men over sixty years of age, and each one presented a morbid complexus so distinctive and uniform as to entitle it to be regarded as a substantive affection—a pathological entity. Although such cases have been described as examples of reflex paralysis, they have not been adequately differentiated from others similarly classified, but of different nature.

Before attempting the task of analysis and differentiation, I must give a brief outline of three cases, the most recent which have come under my observation.

Case I.—Mr. R., æt. 64, merchant and banker, of very vigorous and robust frame, rather spare and bony in outline, but capable of great endurance, called on me a year ago, amongst other physicians of this city,

for relief to an obstinate bowel affection. His story was this: for a year or more previously he had suffered with intestinal indigestion, colicky pains, flatulence, and considerable depression of spirits. Soon after these symptoms were experienced, he began to have pain in the back, with more or less band-like constriction of the abdomen, a feeling of numbness in the feet and legs, a strong sense of fatigue in the inferior extremities, followed by weakness and awkwardness of movements in walking, obstinate constipation, and slowness in the emission of urine. For the relief of these alarming symptoms he consulted an eminent practitioner of this city, who diagnosed myelitis and advised cups, the moxa, and a pill which probably contained ergot. Without using any of the local applications, Mr. R. took the pills, which had a favorable effect in relieving the flatulence and constipation, but presently dysenteric attacks supervened, and then a remarkable change ensued in the spinal symptoms. Up to this period, the paraplegia had steadily increased, and walking had become exceedingly difficult, but the change in the condition of the intestine, effected a revolution in the state of the spinal functions, and in the course of a few weeks, all the paralytic symptoms had disappeared. Still troubled with intestinal indigestion, Mr. R. finally consulted me amongst others, when I learned the details of the case just given. Very recently I have heard that Mr. R. continues free from the spinal symptoms, and has in the main got rid of his intestinal disorder.

Case II.—Mr. P., a tall, thin, but hardy Quaker farmer, æt. 72. I saw the patient at his home, near Delta, York Co., this State, in consultation with Dr. Hickman, a very intelligent practitioner living there. I learned that the patient some ten years before had experienced a similar attack, but had recovered rather suddenly under the influence of some remedies which were then prescribed. For some years, he remained comparatively free from disorders of digestion. The present attack came on during the past winter; at first there appeared a very considerable disturbance of digestion—acidity, pyrosis, flatulence, and colicky pains. The distress was increased by taking food, and apparently attained its maximum when the alimentary materials entered the intestines. In fact, the symptoms of intestinal indigestion were the most pronounced throughout, and to these were added obstinate constipation, the stool consisting of balls united by masses of mucus, or coated with the same. Very soon after the gastro-intestinal catarrh was established, Mr. P. began to experience numbness of the feet and legs, and an increasing difficulty of locomotion.

At the time of my visit with Dr. Hickman, the patient was nearly entirely disabled. The history of very severe and continuous digestive troubles was repeated. I will, therefore, to occupy as little time as possible, pass on to the objective examination of the paraplegia.

He could not stand without assistance; there was an extreme degree of ataxia; the muscles were so weak that his utmost efforts could not at all hinder slight movement of extension when the legs were flexed on the thigh; the tactile sense was so lowered that the points of the æsthesiometer could not be felt at all; the muscles responded feebly to an induction current; the emission of urine was very slow, and there was much dribbling afterwards, and the bowels were extremely sluggish. There was a feeble knee-jerk.

With attention directed entirely to the digestive trouble, beginning with an exclusive milk diet, in two weeks a marked improvement was manifest in all the symptoms, the paraplegia disappearing. In a letter recently received from Dr. Hickman, I learn, that after

a period of very great improvement, Mr. P. began to decline in strength, owing to failure of the functions concerned in nutrition.

Case III.—Mr. McK., of Clearfield Co., about sixty years of age, has had for many years frequent attacks of sick-headache. Within the past year, pronounced symptoms of intestinal indigestion, pain of a colicky character, flatulence, and irregular action of the bowels, etc., have come on; but the symptom which has caused the greatest apprehension, and on account of which, more especially, he has called on me, is an increasing numbness with some diminution of power of the inferior extremities. The tactile, pain, and temperature senses, are not abolished, only slightly impaired, and the tendon reflex is unaffected. A feeling of fatigue, of weight and heaviness is felt in the legs, but locomotion is not as yet much affected. I await further developments in the symptoms referable to the nervous system, but meanwhile treatment is directed to the gastro-intestinal disorder.

Cases similar to those which I have thus briefly outlined, have been recorded by various observers. An admirable example, and one of the first of its kind, was narrated by that eminent clinician, Graves, of Dublin (*Clinical Medicine*, edition by Neligan, vol. i. p. 558). In this case extreme gastric disturbance, with less important intestinal, came on in distinct paroxysms, varying in duration from several days to two or three weeks, and accompanied by complete motor paraplegia. For a time, entire recovery took place, the paralysis disappearing with the cessation of the other symptoms. Finally the attacks grew so frequent as to be almost continuous, and death ensued from exhaustion. The minutest examination failed to disclose a lesion in any organ of the body. With the advance in our means of investigating morbid states, such cases of presumed functional disease of the nervous system are becoming more and more rare. That there is a condition of reflex paraplegia, due to anæmia of the cord, is a postulate I expect to maintain. That there is, however, a so-called reflex paraplegia connected with diseases of the gastro-intestinal and genito-urinary tracts, which is not truly reflex, is another postulate that I believe to be susceptible of demonstration.

There was a period, in England more especially, when the notion of reflex paraplegia secondary to intestinal, renal, and genital disease, was widely entertained. The cases first reported by Stanley (*Medico-Chirurgical Transactions*, vol. xviii. p. 260), Brodie (*Lectures on Urinary Organs*, p. 115), Stokes (*Practice of Medicine, Treatment of Nervous Diseases*), Graves, and others, were supplemented by the striking narratives of Gull (*Guy's Hospital Reports*, various papers). Then Brown-Séquard (*Lectures on Paralysis, etc.*, 1861) gave a scientific explanation of the mechanism, referring the paralysis to vaso-motor action. It must be admitted, nevertheless, that the doctrine of a reflex paraplegia has not maintained the position it once had. In no modern work is the subject treated with the extent and gravity befitting an important disease.

The two postulates I purpose to sustain, are:

1. That there is a reflex paraplegia due to a functional disturbance of the intestine—enteric paraplegia.
2. That there is a paraplegia having its initial seat in the end-organs of the nerves distributed to the mucous membrane, thence ascending to the cord by a progressive neuritis.

As respects the first postulate, the cases I have narrated, and many others on record, demonstrate a causal connection between the enteric disorder and the spinal. That the paraplegia is functional is proved by its prompt cessation when the cause is removed. One of the means of determining whether a given paraplegia is due to a myelitis, or to mere anæmia—that is, func-

tional—is the subcutaneous injection of strychnine. At a late meeting of the American Neurological Association, Dr. Jewell, of Chicago, recounted his experiences with considerable doses of strychnine in cases of paraplegia, which improved so remarkably that they must have belonged to the merely functional group. It is in a high degree probable that cases of merely reflex paraplegia—of enteric paraplegia—especially as they occur in aged subjects, are relatively frequent, and happen from a degree of intestinal disturbance that seems a mere accident of the morbid complexus.

What is the mechanism? We are helped in our consideration of this question by physiological data. Kussmaul and Tenner (quoted by Erb), have shown that sufficient loss of blood will cause paraplegia. Tying the abdominal aorta, and its obstruction by disease—of which Gull (*Guy's Hospital Reports*, 1858, p. 311) has given a striking example—embolic blocking of the spinal vessels, as Panum (*Virchow's Archiv*, Band xxv.) has experimentally demonstrated, and large uterine hemorrhage as Moutard-Martin (*L'Union Médicale*, 1852) has shown, have alike stopped the spinal cord functioning. In other words, an insufficient blood supply—an anæmia—is a cause of paraplegia. Brown Séquard in his *Lectures*, published in 1861, maintained the thesis that a strong contraction of the vessels of the cord induced by reflex stimulation is the essential condition in reflex paraplegia. We should not lose sight, in this connection, of the degree of stimulation necessary. A moderate degree of intestinal irritation suffices—for the law of reflex contraction of the vaso-motor fibres may be formulated thus: irritation of the end-organs of the sensory nerves, not too violent and long continued, stimulates the vaso-motor centre in the medulla, and causes a general contraction of the arterioles; but excessive and protracted irritation depresses the vaso-motor centre and relaxes the vessels. It seems probable that an ordinary intestinal indigestion and the stretching of the nerve fibres produced by retained gas, is a degree of irritation sufficient to produce the supposed effect. To the further elucidation of the mechanism of enteric paraplegia, it is necessary to recall the fact that the blood pressure in the vessels of the intra-abdominal organs rises and falls within considerable limits in quite an independent manner, controlled, doubtless by the same ganglia that regulate the calibre of the intraspinal bloodvessels.

The circulation within the spinal canal is peculiar, in that the veins bear such a disproportionate volume to the arteries, and that the whole vascular supply is in a certain sense a diverticulum. Atheroma of the vessels will contribute to the result of reflex irritation, and hence it is that paraplegia has resulted from endarteritis of the spinal vessels.

The second postulate, is that the paraplegia which succeeds to certain cases of enteric, renal, or genital disease, is due to an ascending neuritis. Chronic dysentery, pyelitis, and vesical catarrh, are affections during the course of which the spinal cord has become diseased. Lesions of continuity involving the terminal nerves in structural changes, are necessary to the production of this effect. The part which ascending neuritis may play in causing anatomical alterations of the spinal cord, is exhaustively shown by Friedreich in his monumental work on progressive muscular atrophy (*Ueber progressive Muskelatrophie, über wahre und falsche Muskelhypertrophie*, Berlin, 1873, Hirschwald). Whether we accept his conclusions or deny them, we cannot withhold the full measure of admiration for his labors. Starting with the theory of an intramuscular neuritis, Friedreich holds that by an extension of this affection upwards, the cord is ultimately reached, and

the changes belonging to progressive muscular atrophy are wrought. The intramuscular neuritis admitted, the rest may easily follow. Under the term "Chronic Ascending Neuritis," Dumenil has described the changes in injured nerves which, caused by trauma, proceed from the point of injury up to and involve the cord. Vulpian has especially demonstrated the modifications produced in the spinal cord, by the section of a principal nerve in a member, usually the sciatic (*Archives de Physiologie Normale et Pathologique*, No. 3, 1868, p. 443). The nerves of a limb amputated, as Dickinson has especially shown, undergo degenerative atrophy, and that part of the spinal cord in anatomical connection therewith, also atrophies. Many other observations might be quoted, but these will suffice to show how changes in the cord follow injuries to peripheral nerves.

In paraplegia secondary to ulceration of the mucous membrane, we can readily, I think, conceive of a lesion of the peripheral nerves and an ascending neuritis to which the succeeding changes are due. It follows that such cases require a very different prognosis from those of simple reflex paralysis. The course and termination of the latter are affected by the causal lesions, whilst the former pursue a steadily unfavorable direction from the beginning of the spinal symptoms. The differentiation of reflex from secondary paraplegia is made by attention to the following points:

Reflex paraplegia is sudden in its onset, or, at least, develops quickly; secondary paraplegia is gradual in its evolution; the former is soon complete in all points of its symptomatology; the latter attacks one spinal function at a time. Reflex paraplegia follows the fortunes of the producing malady; secondary paraplegia pursues an independent course, and when the alterations begin in the spinal elements, they proceed in their own way, just as after amputation of a limb, the changes in the cord go on in the associated nerve fibres, or as in Landry's ascending paralysis, the lesions proceed by contiguity of tissue. Reflex paraplegia, of and by itself, never proves fatal, nor does it inflict permanent damage; secondary paraplegia may be the cause of death, and if not fatal, effects lasting mischief.

To this view of reflex paraplegia it may be objected, that extreme variations in the vascular supply must ultimately lead to structural changes. This is certainly possible, but the spinal, like the cerebral circulation, is arranged to permit considerable variations in the amount of blood.

It remains to explain, if an explanation be possible, why intestinal or renal lesions may in one case produce a merely reflex disturbance, and in another, set up an ascending neuritis. There are, probably, two reasons: 1st. The depth and extent of the peripheral lesions. 2d. An inherent susceptibility to degenerative changes in the nervous elements. The first to me has profound significance, and I have already alluded to it. A degree of peripheral irritation not too great, will merely stimulate the vaso-motor centres, and cause anæmia of the cord by tonic contraction of its vessels, but when the lesions of the mucous membrane are of a destructive kind, depression of the trophic centres, as well as of the vaso-motor, ensues. That there is a neuropathic type of constitution, in which the nerve-tissues are peculiarly prone to take on morbid changes is an indisputable fact. When the two influences coincide the result is not doubtful.

I must, then, conclude that there is a malady which may properly be entitled *Enteric Paraplegia*.

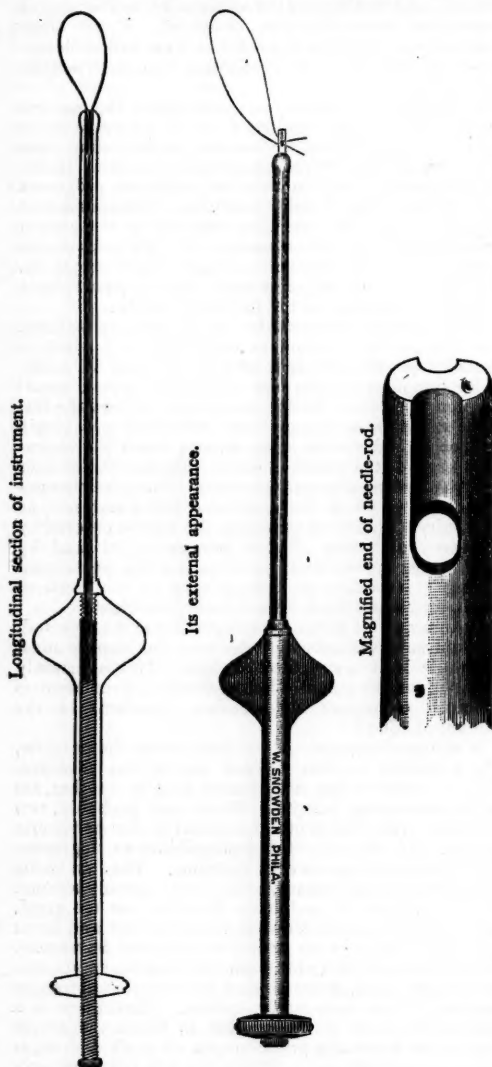
NEW INVENTIONS.

A NEW WIRE SNARE ÉCRASEUR.

BY CHAS. E. SAJOUS, M. D.,

INSTRUCTOR IN LARYNGOLOGY IN THE POST-GRADUATE COURSE, JEFFERSON MEDICAL COLLEGE, ETC.

THE accompanying cuts represent an instrument which I have had constructed for the extirpation of intra-nasal growths. While possessing all the merits of other wire écraseurs, it has the advantage of being much less complicated, and consequently easier of



manipulation. It consists of five pieces: two cylindrical tubes, two rods, and a milled-nut.

The two tubes are made of steel and of different sizes. The narrower one, or end-piece, is 4 inches long and $\frac{1}{8}$ inch in diameter, and is threaded at one end to fit tightly in that of the second or larger tube. This is only 3 inches in length and $\frac{1}{4}$ inch in diameter. The

two rods are also of different sizes, their diameters allowing their introduction into the tubes, the cavities of which they fill, and along which they can move freely. The end-rod, about the thickness of a crochet-needle, is $\frac{1}{4}$ inch longer than the narrow tube and protrudes through it. Its end is furnished with an egg-shaped needle-eye. The other end is threaded to fit in that of the larger rod, which is also $\frac{1}{4}$ inch longer than the tube containing it, and threaded throughout its entire length for the movement over its surface of a milled-nut. This nut lies in close apposition to the posterior end of the large tube, and when revolved from left to right, causes the rods to descend. Near the middle of the instrument is a ribbed finger-rest to insure the operator a firm hold. Rotation of the rods in the tubes is prevented by a ridge in, and at the end of the larger tube, corresponding with a narrow, flattened, longitudinal surface on the threaded rod.

In other instruments, the wire has to be passed throughout the entire extent of the tubes and attached either to rings, pins, etc., or whatever the inventor may have thought best, a rather lengthly and sometimes difficult procedure, especially if the inside of the instrument be a little rusty. In that introduced in this paper, but a small piece of wire is needed, say two or three inches, as the case may be; this is doubled into a loop, and the ends passed through the eye until they protrude about a quarter of an inch. Traction being then caused by turning the milled-nut, the end of the rod will disappear in the tube, doubling the wire ends on the loop. As shown in the annexed cut, representing the end of rod as seen through a lens, a shallow groove connects the needle-eye with the tip of the rod on each side. When traction is induced, the ends on one side, and the apex of the loop on the other, half fill these grooves, and the pressure exerted by the surrounding tube holds them as tightly as in a vise. The edge of the needle-eye is rounded and smooth so as to avoid a too sharp bend in the wire, which would cause it to break. For operations in the pharyngeal vault, there is a curved end which can be attached to the narrow tube and held there by a self-acting spring.

Besides the simplicity of its construction, this instrument presents advantages which I think it advisable to enumerate:

1st. It is strong as well as light, and its different parts can readily be separated for cleansing.

2d. The wire can be attached in a moment and as rapidly withdrawn.

3d. The loop being close to its point of attachment, it is not liable to twist on its axis.

4th. The loop being at one end, the milled-nut at the other, and the point of support in the centre, it is evenly balanced.

5th. The milled-nut being immovable longitudinally, its rotation does not involve lateral motion of the operator's arm, thereby avoiding pressure of the point of the instrument against the tumor.

While being especially adapted to intra-nasal operations, extirpation of polypi, hypertrophic thickenings of the nasal mucous membrane, adenoid vegetations of the pharyngeal vault, etc., it seems to me that it could be used with advantage in gynecology, aural surgery, and all operations in which an écraseur would be indicated.

NEWS ITEMS.

ST. LOUIS.

(From our Special Correspondent.)

THE ST. LOUIS MEDICAL SOCIETY AND THE ETHICS OF ITS MEMBERS.—The antiseptic spray has been turned on by the Medical Society, and a thorough

cleansing process is undertaken, or at least attempted. Erratic brethren exist in the Medical Society of St. Louis as they do in the societies of all other cities, neither more nor less; and though pledged to obey the laws of the Society, as well as the Code of Ethics which governs all, they seek their own path, apart from the trudging masses, for the sake of making a short cut, or of enjoying a more pleasant voyage than they anticipate on the hard high road. The indulgent and kindly spirit which governs the profession, forces them to wink at this proceeding and ignore it unless the independent brother strays too far away.

The unusually cool and pleasant summer which we have enjoyed, has obviated the necessity of the usual vacation which takes place in the meetings of the Society, and fresh in body and mind the fall meetings have been entered upon with unusual activity and interest. Unwillingly, but most necessarily, has the attention of the Society been directed to certain professional irregularities existing here, as they do everywhere, and ignored unless they become so public and excessive as to injure the profession by the odium attached to any one of its members. It is not a local matter merely, as similar conditions exist in many other Societies, and those members of the profession who make an effort in the right direction, taking upon themselves the often unpleasant task of upholding the dignity of their calling, should have the hearty support of their brethren throughout the land.

Certain of the physicians of this city have come into remarkable notoriety of late; and the St. Louis Medical Society was first aroused to action by the doings of a man, indeed, a regular graduate and member of the Society, who has been repeatedly arraigned before the court of criminal correction for the crime of abortion, and who has now been expelled from the Society for other irregular performances. This innocent has sued the committee who recommended his expulsion, for fifty thousand dollars damages, as an appropriate equivalent for the injury done to his character.

MEDICAL ADVERTISING.—The subject of ethics has brought up for consideration minor matters. Thus the circular sent out by an enterprising young member, who some years ago was reprimanded by the Society, and would have been expelled had the opinion not prevailed that no such power was vested in the organization, by reason of a verdict of a court many years ago, which had reinstated a member thus expelled. The gentleman now before the house had issued a circular in recommendation of a new enterprise upon which he had entered; although the circular shown was received by a layman, the author claims to have sent them to the profession only. Urged by the Society, upon recommendation of its committee on ethics, to withdraw said circular, he resigned, and was permitted to do so. His claims of having merely announced his institution to the profession, and the consequent action of the Society, make it appear to those ignorant of the details that he is a sadly persecuted individual. Some of the daily papers have even represented him as such: as an independent man suffering from the restrictions of an antiquated Code. Were the terms of the circular known, which come as near guaranteeing a cure by operation as can well be done, the public and the profession would think otherwise. The gentleman justly claims that he cannot, without advertising, successfully compete with older institutions, forgetful of the fact that such older institutions are the result of the hard work of earnest men throughout long years—perhaps the work of a lifetime, and have by fair means won the esteem of the public, which learns to know the merits of men and institutions without the aid of circulars or daily papers.

Quite a number of gentlemen, seeing the course taken by the Society, followed with their resignations, unwilling to give up the advertisement of their specialties; even that of a member of the committee on ethics was presented, as he seems disinclined that his advertisement for the cure of consumption should come before the Society. All this is advertising *not* according to the Code. Other advertisements (in accordance with the Code?) have not been considered, such as those of the schools, or of the professors of colleges, who certify to the harmlessness of "Horse-shoe" tobacco, or the certificates which accompany the recommendations of various medicinal preparations, attested to by men of prominence and otherwise throughout the country, their positions and specialties carefully appended to their names.

This is a question which has been before the profession before, as we may see by the action taken by the American Medical Association in 1868, where a committee was appointed to report on the subject of specialties in medicine, and the propriety of specialists advertising. Four resolutions were then passed: 1. Specialties are legitimate fields of practice. 2. That specialists shall be governed by the same rules of professional etiquette as all other physicians. 3. That it shall not be proper for specialists publicly to advertise themselves as such. 4. That private hand-bills, addressed to members of the medical profession, or cards in medical journals calling attention to themselves as specialists, be declared to be a violation of the Code of Ethics; though it is proper for a physician to announce that his practice is limited to a certain disease or diseases, "that such is simply a note of limitation, but involves no other principle than the notice of the general practitioner, that he limits his business to certain hours of the day; neither would it be regarded as a claim for especial qualifications."

These matters will now assume greater importance and publicity, as specialists and specialties are becoming more numerous; and the beginner or the unsuccessful specialist, jealous of the success of his more able or more fortunate colleague, seeks by public prints or circulars, and cards in the daily papers, to bring himself into that notice which the other has acquired by patient labor of years.

There is, however, a just claim made, by those gentlemen, of equal advertising rights with college officials, whose specialties and positions are most liberally advertised by college circulars and notices in the daily and medical press. But simple Dr. A. advertises his specialty as does the renowned Dr. B., who has the good fortune to be *Professor* of the particular branch. A. pays out of his own pocket for the pleasure, whilst the college settles the bill for B. Colleges might advertise like all other schools; no institution of learning details the names of its teachers, except in its annual announcement, never in standing advertisements. Why is this done by medical schools?

There can be no question as to the wording or meaning of the Code of Ethics of the American Medical Association, which is adhered to by all other associations, or the rules so distinctly laid down by the American Ophthalmological Society, which do not even permit the word "oculist" to be used in connection with any public notice of the physician doing an ophthalmological practice; that his sign must read as plain "M.D.," without limitation or addition. So many are advertising freely without infringing the Code, that it certainly seems unjust that the physician not favored by such accident which permits of this, should be prevented from placing his name with equal publicity before the profession and laity.

It would be well if these questions were pushed to an issue before the St. Louis Medical Society, and if

the societies of other cities would bestir themselves, and call to task their offending members, as well as those offending under the semblance of the law. A strict line should be drawn and a law made to govern every member of the regular profession without exception; and all offenders punished, or else they should be exonerated and their action thoroughly justified.

Country practice is the great incentive to advertising, as numbers of the ailing in smaller towns and remote districts coming to the city for relief, are guided by the advertisement which best pleases and suits their fancy. If we have a law such as the Code of Ethics of the American Medical Association, we must obey it; it is the result of thoughtful deliberation of able and honorable men, and that it is pretty nearly correct may be argued from the similarity of the regulations which govern the members of the medical profession in other countries.

As the St. Louis Medical Society has once begun the work, let it go on fearless of consequences; however unpleasant it may be to wound the feelings of a brother practitioner, let right be done; and let the profession elsewhere second these efforts and urge bold action. Let us adhere to the decision of chosen men, whatever it be. It is, as a rule, the restless jealous minority, unwilling to seek success by the slow process of hard work, who are anxious for other and easier means of rising above the surface; and such advertising should be squelched, but the law must apply to all alike.

CHICAGO.

(From our Special Correspondent.)

THE RUSH HOSPITAL MEDICAL COLLEGE.—The new hospital building in connection with Rush College is being pushed forward toward completion. It will be ready for occupancy next spring.

THE COOK COUNTY HOSPITAL.—The two new pavilions of the Cook County Hospital are nearly ready to be occupied. They will accommodate about one hundred and fifty patients.

THE MEDICAL COLLEGES OF Chicago show about the usual number of students at this season. The Chicago College has about one hundred and fifty pupils; the Rush about four hundred and twenty-five; the Woman's about ninety; the College of Physicians and Surgeons about one hundred and fifty.

RUSH MEDICAL COLLEGE.—Dr. W. T. Belfield has been appointed a Lecturer on Surgery in Rush College, to take the place of Dr. Roswell Park, who resigned some weeks ago to accept the Professorship of Surgery at Buffalo.

CINCINNATI.

(From our Special Correspondent.)

THE MIAMI MEDICAL COLLEGE.—Dr. William A. Rothaker has been appointed Lecturer on Pathology in the Miami Medical College, and began a course of lectures there this week. Dr. Rothaker is a young man of more than ordinary ability, and the Miami College is to be congratulated in its choice of one so peculiarly fitted for the position. The lectures that Dr. Rothaker has delivered as pathologist to the Cincinnati Hospital have won for him an enviable reputation, both because of his familiarity with the subject and his ready use of language. Among his literary productions is the text accompanying the *Atlas of Obstetrics and Gynecology*, published in this city a year ago.

DR. WILLIAM B. THORNTON, one of the oldest practitioners of this city, died recently at his residence

on College Hill. In his will he provided substantial endowment for a Thornton professorship in Wabash (Indiana) College.

BALTIMORE.

(From our Special Correspondent.)

THE JOHNS HOPKINS LECTURES ON MUNICIPAL HYGIENE.—DR. JOHN S. BILLINGS has been lecturing at the Johns Hopkins University before the students of the University, persons interested in sanitary science, and the administration of cities, and the medical profession, on Municipal Hygiene. He has already delivered several interesting lectures of his course of twelve. The following is a brief abstract of the chief points discussed in the first four.

Sanitary science is not a perfect science; many of its results can only be said to be probably true, and definite laws are not yet established. But it is much better to know what is likely to promote healthfulness than to be ignorant of the matter. This is the age of cities; they have been growing very rapidly. This has its good and its evil side. The sanitarian and statesman's object is to keep the good and get rid of the evil. This they should try to do, not only on ethical grounds, but also because it is practical—it pays. The sanitarian tries to check unnecessary waste of life, to make men's lives happier and longer, and freer from pain, to increase the productive powers of the citizens, and indirectly to prevent vice and crime, which flourish under the same conditions as disease. He studies the influence of existing conditions upon the life and health of the citizens by means of vital statistics. In collecting vital statistics he finds great trouble for many reasons.

Mortality (i. e., ratio between number of deaths and number of living inhabitants, per thousand) is much greater in cities than in rural districts. In cities it increases with the density. The mortality is not equally distributed among all classes, and is greater among males than among females, greater among colored population than among white, and is greater among the lower classes. In cities it is greatly affected by prevailing occupations, and by emigration and immigration. The birth-rate in cities is greater than in the country. Among the American families in New England, the birth-rate is gradually lowering, so that in some districts the birth-rate does not exceed the death-rate. The construction of life tables showing expectation of life is of great importance. In many places they are, however, very difficult to construct, on account of insufficient data. They should be made for male and female, white and colored population, in the various parts of city and country.

Of late years attempts have been made to study statistically the diseases which cause death, and to classify them. They may be divided into (1) hereditary, (2) physical and chemical (due to weather, climate, soil, etc.), (3) organic and vital, (4) mental and emotional. To the third class belong the bacterian diseases, which are divided into (1) parasitic, (2) contagious, (3) miasmatic, and (4) miasmatico-contagious. The Romans believed that certain diseases were caused by living animals in the human body. This notion was first put into a scientific theory by Pasteur, and it is now known as the "germ" theory. Many have been working in this field; one of the most important results is Pasteur's "attenuation of virus," by means of which a second attack of the same disease can be prevented. Septicæmia and like diseases are now believed to be due to the germs of putrefaction. In this direction, great strides have been made, so that the dangers of surgical operations are very greatly diminished. The importance of thorough investigation of this subject is recog-

nized by several European governments, which are spending great sums of money for their prosecution—our government, on the other hand, is still doing nothing.

Water and its Supply.—By water many diseases are conveyed; great care must therefore be exercised in its supply. The old division of water into wholesome, suspicious, and dangerous must be accepted with some modification. Rainwater is not pure, always containing germs which it has washed out of the air. To secure a good supply of pure water is the great problem. In large cities it is practically impossible to preserve wells unpolluted, the vault and the well are often in direct contact, as, for example, the "sulphur" wells of Baltimore and Washington, a few years ago. The danger is due to living organisms present. How much of foreign substances are living, chemistry cannot tell. The biologist can, by observing growth, effects, etc. Dr. Koch found thirty-eight million microdermes (living organisms) in a cubic centimetre of impure water, but in the same quantity of pure distilled water only four. His experiments show that water with more than one hundred and twenty microdermes to the cubic centimetre is unfit for drinking purposes. The chemist can do two things: (1) determine any gross pollution, and (2), by making periodical examinations of a given supply, detect any change from its normal condition, which can then be investigated. All attempts to pollute the water supply above the city should be prevented. When none but suspicious water is available to a city, it can be greatly purified by filtration, especially through spongy iron, which destroys the vitality of germs. Waste of water, caused chiefly by leaky fittings and bad faucets, is a great drain on water supply, much greater than one would think. Manchester, Liverpool, and Glasgow require all fittings to be examined, and by an ingenious method discover all leaks, which are speedily repaired. By these means these cities have sufficient water, while otherwise they would be in great want.

LONDON.

(From our Special Correspondent.)

THE DEBATE ON PROF. LISTER'S ADDRESS.—The debate before the Medical Society of London, on Monday, November 5, proved to be of considerable interest, and the hour of adjournment was overstepped by another hour to allow of the full discussion of this remarkable subject, but more especially to hear what Prof. Lister had to say in answer to the objections made against his theory and practice. Mr. Bryant was the first to speak, and in an able though rather discursive manner, he apparently made out a strong case against Prof. Lister's teachings. Of the value of antiseptic surgery, Mr. Bryant had no doubt, but on the evening in question he joined issue with Prof. Lister on at least three points. He complained of the too confident expressions used by him. He did not think the operation was called for or justifiable in most cases of simple recent fracture of the patella. And lastly, he contended that strict Listerism was not necessary in order to be perfectly in accord with the grand principles of antiseptic surgery. Readers of Prof. Lister's address will not fail to see that the charges brought against the language of the address, referred to such phrases as "morally certain that septic influences could be avoided"—"convert serious risk into absolute safety and certainty." Mr. Bryant said, indeed, he thought that Prof. Lister did not really intend these statements to be so absolute, for in another part of the paper allusions were made to certain "disasters that might occur." He considered the operation unjustifiable because the results of the old-fashioned treatment were in his experience quite satis-

factory. It is true that in many instances there was separation for more than half an inch, but the utility of the limb was by no means impaired.

Besides Mr. Bryant the discussion was joined in by Messrs. Adams, Bloxam, Gant, Henry Morris, William Rose, G. R. Turner, Morratt Baker, Edmund Owen, and others. Most of these gentlemen concurred in the views expressed by Mr. Bryant. Messrs. Bloxam and Rose were exceptions, however, and both these gentlemen had performed the Listerian operation three times with remarkably good results. Perhaps, the speech by Mr. Henry Morris told best of all against Mr. Lister. Mr. Morris made much of the statement, probably used only figuratively by Mr. Lister, to the effect that a first year's student could perform the operation, so simple were the procedures. Stress was also laid by Mr. Morris on the friability of the bone forming the patella. This was proved not only by the primary accident, but also by the fact, vouched for also by Mr. Bryant, that refracture takes place not through the seat of ligamentous union, but through the bone and generally the lower fragment. Mr. Morris thought that antiseptic principles were the main ones, and drew a distinction between Listerism and other modes of attaining the ends of antiseptic treatment.

But to our minds, in his reply, Mr. Lister was not only fully equal to the occasion, but actually came off almost more than conqueror. He ventured to say that even Mr. Bryant would be surprised to see the records of his (Mr. Lister's) death-book. He had operated on numbers of cases of ununited fractures of the femur and for loose cartilages of the joints without a single death or disaster; and in "a multitude" of cases of disease of the knee-joint with similarly good results. Answering Mr. Bryant, he would say that the disasters to which allusion had been made, were to be feared in the hands of those who did not carry out the strict antiseptic precautions, and he repudiated the notion that he feared such disasters in his own hands. He did not mean to say that he would encourage every surgeon to operate in cases of simple recent fractures. Far from it. But he did believe that with due care and proper precautions such operations might be made so free from risk that the operator might feel "morally certain that no septic influences should be introduced." The phrase "convert serious risk into absolute safety," had reference not to the condition of the patient, but to the prevention of all those diseases which come from the outside. For Mr. Lister, no separation could possibly be made between Listerism and antiseptic surgery; the one was coextensive with the other, and he denied that he had advocated any single stereotyped mode of procedure. He spoke well of corrosive sublimate, iodine, eucalyptus, salicylic wool, and other dressings. Mr. Lister also objected that the results of the old treatment of fractured patella were all that could be desired. His experience, indeed, led him to the opposite conclusion.

BERLIN.

(From our Special Correspondent.)

ANATOMICAL TEACHING AT THE BERLIN UNIVERSITY.—The lecture catalogue of this University is just out, but it does not exhibit the important changes recently made in the anatomical department. C. B. Reichert, the venerable successor of Johannes Müller, has at last consented to become restricted to the administration of the Anatomical Museum, in response to the combined efforts of the press, the government, and his own colleagues. German professors, as is known, are unremovable, and sometimes make a too prolonged use or rather abuse of this right. Long enough it was an open secret, that Reichert, otherwise so well merited, belonged

to this category, and it was the unanimous opinion that the anatomical instruction at our largest university during the last ten years was in a very bad condition, and it threatened to become of serious detriment to the whole profession.

There is no doubt that Prof. Waldeyer, of Strassburg, who has been recently elected as a second lecturer in anatomy, will soon restore the diminished reputation of the anatomical chair. We are informed that he has appointed Dr. Hans Virchow, the son of the great pathologist, to be his second prosector (the first being Prof. R. Hartmann, the anthropologist).

DISCOVERY OF THE MANTLE OF THE FISH-BRAIN.—Nevertheless, Reichert's studies on the normal and comparative anatomy of the brain will not be forgotten. A pupil and former assistant of his, Dr. Rabl Rückhardt, who meanwhile acknowledges to have found it difficult enough to get over the detrimental influence of a school, whose leader indulged in the negation of every modern progress, has lately made a very important discovery. Until now, it seemed almost impossible to state a proper correspondence between the different parts of the brain of teleostian fishes. There existed unsettled controversies with regard to the interpretation of almost every region, particularly the lobi optici and what used to be called the hemispheres. The researches of some modern investigators, far from throwing light into this dark domain of comparative anatomy, only further complicated the question.

But lately Prof. Fritsch declared the "tectum loborum oysticorum" to be homologous to the pallium (mantle) of the higher vertebrates, being unable to find it in the apparently solid hemispheres. Now, Dr. Rabl Rückhardt has discovered this pallium *in loco*, reduced to a thin epithelial layer, covering the hemispheres. Between them there exists a cavity, being the second ventricle, not yet separated by a fissura pallii; consequently the two large ganglionic bodies forming the floor of this cavity, and formerly taken for hemispheres, must now be regarded as corpora striata. Rhinencephalon (olfactory bulbs), corpora striata, and epithelial layer constitute, together, the "cerebrum," and the reduction of what represented the seat of the highest intellectual powers in other vertebrates to a simple epithelial membrane, justifies our looking on the fish-brain as on "an idiotic reflectory engine, so much beneath the brain of higher animals as a simple epithelium is beneath the complicated nervous tissue of the cortex." The proofs of the homologies drawn by Dr. Rückhardt are derived partly from the embryology of salmonides, partly from a series of microscopic sections of the brains of adult fishes, together with the cranium, by means of imbedding the latter in celloidine (collodion), which keeps the very thinnest membrane in its original position. A hundred years' controversy is thus brought to a satisfactory conclusion.

THE DUBOIS REYMOND JUBILEE.—On the 22d of October, E. Dubois Reymond, the well-known physiologist and philosophical essayist, celebrated the twenty-fifth anniversary of his nomination as a professor under the general sympathy of his friends, pupils, and colleagues.

NEW QUARANTINE REGULATIONS AT PENSACOLA.—At a meeting of the Board of Health of Escambia County, Florida, on the 10th of November, it was

Resolved, That from and after the 15th day of May, and until the 1st day of November, A.D. 1884, no vessels from Havana, Vera Cruz, Rio de Janeiro, or other points where yellow fever has actually appeared, shall be permitted to discharge ballast or receive cargo in the Port of Pensacola.

That all vessels sailing from other ports of the West

India Islands, Central and South American States, and points subject to infectious or contagious diseases, and arriving in the Port of Pensacola, on and after the 1st day of May, and before the 15th day of November, A.D. 1884, shall discharge their ballast in quarantine, be fumigated and cleansed, and remain in quarantine at least ten days after fumigation, and may then be released by the quarantine physician, approved by this Board.

That vessels from Havana, Vera Cruz, Rio de Janeiro, and Aspinwall, and all vessels having unclean ballast on board, arriving in this port, between the 1st day of November, 1883, and the 15th day of May, 1884, shall discharge their ballast, either under water, below low water mark, or must discharge their ballast at quarantine station, subject to the orders of the officer in charge of that station.

YELLOW FEVER AT HAVANA.—Sanitary Inspector Burgess, of the Marine-Hospital Service at Havana, reports that there were eighteen deaths from yellow fever in that city during the week which ended on the 15th inst., and that the number of cases in the city and harbor was about seventy-five. He adds: "At no time during this year has so large a proportion of the sailing vessels in the harbor suffered from yellow fever as are now suffering from it."

CHOLERA QUARANTINE RAISED IN CHINA.—The State Department is in receipt of a letter from the United States Legation, dated Japan, Tokyo, 20th October, 1883, announcing that, as the cholera epidemic at Swatow has almost died out, the enforcement of quarantine against that point has been discontinued.

SUCCESSFUL TREATMENT OF CHOLERA.—Our Consul at Port Louis, Mauritius, transmits to the State Department an account of the successful treatment of cholera in that vicinity by Mr. T. Edward Fyers. "It shows that Mr. Fyers, although not a physician, saved by the following simple treatment one hundred and forty-nine persons out of one hundred and fifty, who were attacked by the disease. On the first appearance of an attack, or as soon as possible afterward, there was administered an emetic of 30 grains of ipecacuanha and 2 grains of tartar emetic. After the emetic had acted copious doses of warm water were given to clear the stomach. In case either vomiting or purging continued, the usual doses of diluted sulphuric acid were sure to stop it." The patient, Mr. Fyers recommends, should not be allowed to eat anything until the tone of the stomach has been restored.

UNIVERSITY OF PENNSYLVANIA.—It is reported that the University of Pennsylvania is about to receive a legacy of \$250,000, for the endowment of a training-school for nurses.

COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.—Dr. Frank O. Stockton, of Newark, N. J., has been elected to the professorship of diseases of the nose and throat in this institution.

THE NEW YORK POLYCLINIC, we are informed, opens the second session of six weeks of its second year, 1883-84, with a class of sixty physicians.

The success of the first year was demonstrated in the fact that the class numbered one hundred and sixty-one.

There can be no truer sign of progress in medicine in America than is evident in the earnestness with which practitioners are seeking clinical and advanced study in the various schools for graduates.

THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE.—The additions to the library during the past year, include 3912 volumes, and about 5000 pamphlets; making the total number in the collection about 60,000 volumes and 68,700 pamphlets.

DR. DAVID W. YANDELL, of Louisville, has been recently elected an Honorary Member of the Medical Society of London.

UNVEILING A BUST OF DR. SIMS.—At the recent twenty-ninth anniversary of the founding of the Woman's Hospital in the State of New York by the late Dr. J. Marion Sims, appropriate exercises were held in the endowed ward of the building, at Fourth Avenue and Forty-ninth Street. A marble bust of the late Dr. Sims was presented to the Hospital by Mrs. Russell Sage. She paid a glowing tribute to the founder, and spoke of his warm attachment to the Hospital, which was the first of its kind in the world, and which, through his efforts, had achieved such success. After the unveiling of the bust, which was from the chisel of Dubois, of Paris, there were addresses by Dr. T. Addis Emmet and the Rev. Dr. O. H. Tiffany.

A BRITISH TRIBUTE TO DR. MARION SIMS.—In commenting on the great professional services of Dr. Sims, the *British Medical Journal* says: His achievements are written in imperishable letters in the annals of modern surgical practice; and there are thousands now living, and succeeding thousands in generations yet unborn will have reason to rise up and call him "blessed." The greatest success which any surgeon of genius can hope to achieve, is to be able to definitely and largely add to the power of surgery to save life, to relieve misery, and to effect cure. This success Marion Sims attained in a degree which few can hope to attain.

SIR PRESCOTT HEWETT, BART., recently retired from the active practice of his profession. This step, however, we are glad to learn, was not due in any way to failing health.

PROFESSOR BURDON-SANDERSON.—A Royal Society Medal has been presented to Prof. J. S. Burdon-Sanderson, for the eminent services which he has rendered to physiology and pathology, especially for his investigation of the relations of micro-organisms to disease, and for his researches on the electric phenomena of plants.

PROFESSOR PAJOT has been recently recommended by the Faculté de Médecine, to fill the Chair of Clinical Midwifery made vacant by the death of Prof. Depaul.

TUBERCULAR DISEASE OF LUNG.—The question of tubercular disease of the lung (especially with regard to heredity, contagiousness, and curability), and also of the relation of pneumonia to phthisis, is about to be presented to the Committee for Collective Investigation of Disease in Berlin.

CENTENARY OF THE VIENNA GENERAL HOSPITAL.—Next year will be completed the centenary of this great hospital, which has so long been the pride and envy of the world, and around which the memory of so many famous men lingers. In anticipation of this event, a most interesting work (*Die Medicin in Wien während der letzten 100 Jahre*) has been written by Dr. Puschmann, the Professor of the History of Medicine at the Vienna University, in which he reviews the whole progress of medical education at

Vienna from the time (1744) when, at the instance of Maria Theresa, the illustrious Van Swieten—friend and pupil of Boerhaave—left his native place, Leyden, to establish himself in the Austrian capital.

MONUMENT TO PINEL.—Paris will shortly possess a monument of the great alienist physician Pinel, the Ministry des Beaux-Arts and the Municipal Council of Paris having responded to a proposal put forward by the Medico-Psychological Society. M. Ludovic Durand is the sculptor of the monument, which represents Pinel, standing, holding in his hand the chains which he has just struck off from a young girl who crouches at his feet. The monument will shortly be erected in the Place Pinel, a small open space close behind the great Hospital de la Salpêtrière.—*Lancet*, November 3, 1883.

THE INTERNATIONAL MEDICAL CONGRESS, COPENHAGEN, 1884.—The following are the provisional programmes for several of the sections of the next International Medical Congress, to be held in Copenhagen, in August, 1884:

Laryngology.—1. Treatment of goitre. 2. Syphilitic affections of the larynx, their forms and frequency. 3. The prognostic signification of the different local manifestations of tuberculosis of the larynx. 4. The local treatment of diphtheria. 5. Medicated inhalations in diseases of the air passages. 6. Pathogenesis and treatment of spasm of the glottis. 7. The operative removal of foreign bodies and neoplasms of the air passages. 8. Treatment of nasal polypi—evulsion—galvano-cautery. 9. Paralysis of the larynx. 10. Methodical education of the voice.

Otology.—1. Operative opening of the mastoid process. 2. Nervous diseases of the ear. 3. Dissection of the organ of hearing, with special reference to its pathological alterations. 4. The importance of aural disease in determining fitness for military service. 5. The different kinds of subjective noises and their treatment. 6. Treatment of chronic catarrh of the nasopharyngeal cavity. 7. The bearing of bacteriology in otology. 8. Prophylaxis of chronic diseases of the ear after eruptive fevers. 9. Diagnosis of the intracranial complications of suppurative inflammation of the middle ear. 10. The importance of otology in general medicine.

Section of Psychiatry and Neurology—Psychiatry.—1. Statistics of mental diseases and psychiatric institutions of Northern countries. 2. Proposal for the conformity of annual reports of different insane asylums of different countries. 3. The rôle of colonies in the treatment of the insane. 4. The value of exercises in the treatment of mental diseases. 5. The rôle of schools in the production of mental diseases. 6. The temperature of the body during the primary stages of mental diseases. 7. Mental alienation in infancy. 8. Perversity of sexual instinct. 9. The psychical troubles which replace epileptic attacks. 10. The rôle of syphilis in general paralysis. 11. The anatomical characteristics of the heads of idiots. 12. What method should be employed to break up the use of morphine, and what are the best conditions for treatment?

Neurology.—1. The effect of lesions of the peripheral nerves in the production of the anatomical alterations in the central nervous organs. 2. The secondary degenerations in the brain and spinal cord. 3. The troubles of speech of central origin. 4. The visual troubles of cortical origin. 5. Cortical epilepsy. 6. Vaso-motor and trophic neuroses. 7. The value of peripheral organic affections (especially the sexual organs) in the production of functional nerve troubles, especially hysteria. 8. Amyotrophic lateral sclerosis

or progressive amyotrophic bulbar paralysis, especially as regards the constancy of anatomical lesions, and its difference or identity with progressive muscular atrophy (Aran-Duchenne). 9. The curability of tabes dorsalis. 10. The rôle of syphilis in the etiology of tabes dorsalis. 11. Is the paralysis of Landry a particular disease, or only a symptom which may be produced by different pathological processes? 12. The value of nerve tension as a method of cure.

Section of Obstetrics and Gynecology.—1. The antiseptic method in laparotomy (Mikulicz). 2. Anæsthesia in laparotomy. 3. Early ovariectomy (Knowsley Thornton). 4. The treatment of fibromyomata of the uterus by laparotomy (Kœberlé). 5. Castration in fibromyoma of the uterus. 6. Castration in mental and nervous diseases (Regar). 7. Vaginal extirpation of the cancerous uterus (Schröder). 8. Dilatation of the uterus. 9. The operative treatment of prolapse of the uterus and the vagina. 10. Ovulation and menstruation. 11. The operative treatment of extrauterine pregnancy (Litzmann). 12. International nomenclature in obstetrics (A. Simpson). 13. The albuminuria of pregnant women (Hälbertsma). 14. The treatment of abortion (Gaillard Thomas). 15. The management of delivery (Stadtfeldt). 16. Obstetrical anæsthesia. 17. Treatment of rupture of the uterus during labor. 18. Treatment of neglected shoulder presentation. 19. The Cæsarean operation and the substitutes for it (P. Müller). 20. Statistics of puerperal fever in Denmark, Norway, and Sweden.

A GOVERNMENT INSPECTION OF CATTLE AND DEAD MEAT DESIRED.—The convention called by the Commissioner of Agriculture to consider the contagious diseases of domestic animals met in Chicago on the 15th instant. In the absence of the Commissioner of Agriculture, Dr. Loring, the meeting was opened by Professor Morrow, of the Illinois Industrial College, and Senator Williams, of Kentucky, was made permanent chairman.

Elaborate papers were read by Professor Law, Dr. Salmon, of the Department of Agriculture, Dr. Parsons, Territorial Veterinarian of Wyoming, Dr. Gadsden, of Pennsylvania, and Mr. Saunders. All the grazing sections of the country from Wyoming to New Jersey were represented. The only disease which was deemed an appropriate subject for national legislation was the lung-plague among cattle. It was universally denied that any vestige of the disease exists west of the Alleghanies, and it was admitted that it does exist in parts of New Jersey, New York, Pennsylvania, Virginia, and Maryland. In all the papers and discussions the necessity of stamping out the plague was insisted on, not only to protect the herds of the West from infection, but to remove all suspicion, so that no discrimination can be reasonably made against them in foreign countries. The State law being inadequate, there was an evident determination among the leading breeders and grazers to insist upon action by the Federal Government in the matter of destroying the disease, and, since this is the only authority recognized abroad, it was also argued that a thorough inspection of all cattle and dead meat exported should be made, and a certificate of soundness given by the officers of the National Government.

The Swine Breeders' Association also recommended Government inspection of exported hog products.

SANITARY CONVENTION AT IONIA, MICHIGAN.—Arrangements have been made by a local committee of citizens of Ionia, acting with a committee of the State Board of Health, for a sanitary convention which will be held in Ionia, December 13 and 14, 1883.

At each session of the convention there will be ad-

resses or papers on subjects of general interest pertaining to public health, each paper to be followed by a discussion of the subject treated.

Among the subjects which it is expected will be presented and discussed, are the following:

Sewerage; Ventilation; Present and Future Water-Supply of Ionia; Contagious and Infectious Diseases; Foods and their Adulterations; School Hygiene; Ice from Impure Sources; Poisonous Wall-paper; Best Method of Disposal of the Dead; Disposal of Waste Matter.

HEALTH IN MICHIGAN.—Reports to the State Board of Health, for the week ending November 17, 1883, indicate that whooping-cough, typhoid fever, and intermittent fever have increased, and that typho-malarial fever, dysentery, measles, and remittent fever have decreased in area of prevalence.

Including reports by regular observers and others, diphtheria was reported present during the week ending November 17, and since, at nineteen places; scarlet fever at twenty-four places; and measles at five places.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 19 TO NOVEMBER 26, 1883.

MOORE, JOHN, *Lieutenant-Colonel*.—Relieved from duty as Medical Director, Department of the Columbia.—*S. O. 29, Department of the Columbia*, November 8, 1883.

BACHE, DALLAS, *Major and Surgeon*.—Assigned to duty at Fort Adams, R. I.—*Par. 5, S. O. 215, Department of the East*, November 19, 1883.

BROOKE, JAMES, *Major and Surgeon*.—Relieved from duty at Angel Island, California, and assigned to duty as Post Surgeon, Presidio of San Francisco, California.—*Par. 1, S. O. 162, Department of California*, November 14, 1883.

HORTON, SAMUEL M., *Major and Surgeon*.—Leave of absence granted October 20, 1883, extended three months.—*Par. 7, S. O. 266, A. G. O.*, November 20, 1883.

TOWN, F. L., *Major and Surgeon*.—Until further orders, to perform the duties of Medical Director, Department of the Columbia.—*S. O. 29 Department of the Columbia*, November 8, 1883.

WILLIAMS, JOHN W., *Major and Surgeon*.—Granted leave of absence for one month, on surgeon's certificate of disability, with permission to leave the limits of the Department.—*Par. 5, S. O. 157, Department of the Columbia*, November 12, 1883.

MUNN, CURTIS E., *Captain and Assistant Surgeon*.—Assigned to duty at Fort Warren, Massachusetts.—*Par. 4, S. O. 216, Department of the East*, November 20, 1883.

WINNE, CHARLES K., *Captain and Assistant Surgeon*.—Relieved from duty at Fort Winfield Scott, California, and assigned to duty as Post Surgeon, Angel Island, California.—*Par. 1, S. O. 162, Department of California*, November 14, 1883.

APPEL, A. H., *First Lieutenant and Assistant Surgeon*.—Relieved from duty at Fort Warren, Massachusetts, and assigned to duty at Madison Barracks, N. Y.—*Par. 4, S. O. 217, Department of the East*, November 21, 1883.

RICHARD CHARLES, *First Lieutenant and Assistant Surgeon*.—Relieved from duty at Fort Adams, R. I.—*Par. 3, S. O. 216, Department of the East*, November 20, 1883.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.